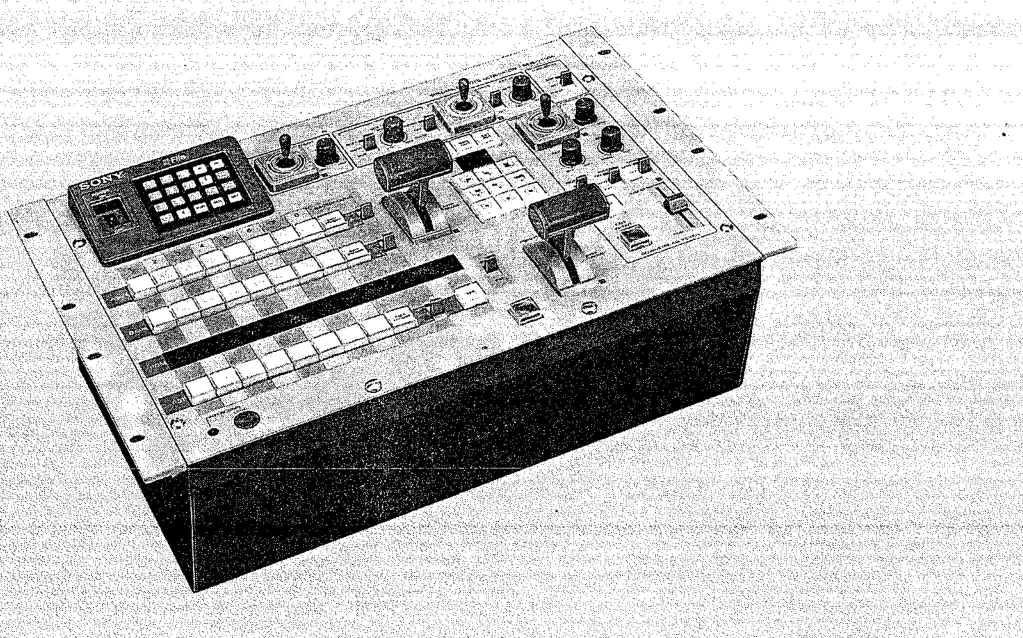
SPECIAL-EFFECTS GENERATOR

SEG-2550A
SEG-2550AP
SEG-2550APM
BK-2551/BK-2552

VOL. 1
GENERAL DESCRIPTION
DIAGRAM
SEMICONDUCTOR ELECTRODES
SPARE PARTS



SONY®

SERVICE MANUAL

Warning—This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

SAFETY RELATED COMPONENT WARNING

Components identified by shading and ⚠ marked on the schematic diagrams and parts list are critical to safe operation. Replace these components with SONY parts whose part numbers appear as shown in this manual or in supplements published by SONY.

LEAKAGE CURRENT MEASUREMENT WARNING (ONLY FOR USA MODEL)

Before returning the set to the customer, confirm the leakage current is less than 0.1mA;

1. **Between all exposed metal parts and any exposed metal parts having a return to chassis, and**
2. **Between exposed metal and earth ground.**

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

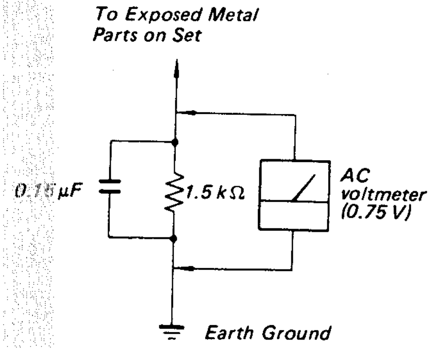
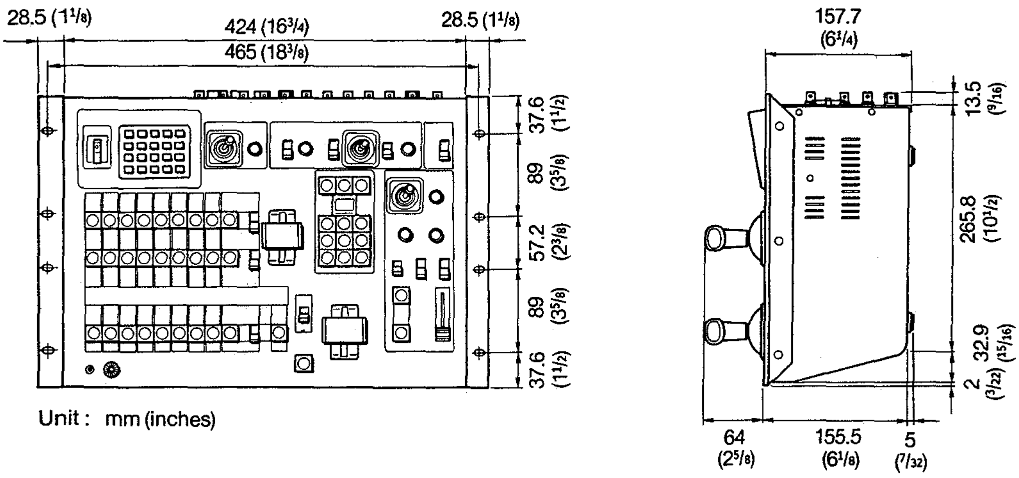


Fig. A. Using an AC voltmeter to check AC leakage.

SPECIFICATIONS

Signal system	
SEG-2550	EIA standards, NTSC color system
SEG-2550P	CCIR standards, PAL color system
Switching system	Vertical blanking switcher
Effects	
MIX	Mixing by PGM/PST MIX lever and the EFF lever
WIPE	137 wipe patterns (selectable) Wipe edge: The softness is continuously variable. Border: Hue, chroma, luminance and width are continuously variable. Pairing: Scanning lines 2 lines/4 lines/8 lines (selectable) Echo: Possible
EXT WIPE	WEX-2000/2000P wipe pattern extender is usable. EXT WIPE IN connector: 6-pin DIN
EXT KEY	Output signal (6-pin DIN only): HD, VD, 4 V p-p, 75 ohms, unbalanced Input signal (BNC and 6-pin DIN): 0.7 V p-p (video) or 1 V p-p (VS), 75 ohms, unbalanced EXT KEY connector: BNC type and 6-pin DIN, with 75-ohm termination switch Slicer circuit is included (Clip level is variable).
DOWNSTREAM KEYER	Output signal (6-pin DIN only): HD, VD, 4 V p-p, 75 ohms, unbalanced Input signal (BNC and 6-pin DIN): 0.7 V p-p (video) or 1 V p-p (VS), 75 ohms, unbalanced DSK KEY connector: BNC type and 6-pin DIN, with 75-ohm termination switch Shadow: Wide and narrow (selectable) Edge: Variable Color matte: Continuously variable, Chroma: Approx. 0 - 700 mV p-p (variable according to the hue level) Hue: 0° - 360° Luminance (Y): Approx. 50 - 700 mV Slicer circuit is included. (The clip level is variable.)
BACKGROUND COLOR	Chroma: Approx. 0 - 700 mV p-p (variable according to the hue level) Hue: 0° - 360° Luminance (Y): Approx. 50 - 700 mV Continuously variable
Input signals	
VIDEO IN 1 — 8	BNC type × 8 0.7 V p-p (VB) or 1 V p-p (VBS), 75 ohms, unbalanced, with 75-ohm termination switches (The INDICATION selector does not function with the VB input signal.)
GEN LOCK IN	BNC type × 1 0.3 V/0.3 V (BS) or 1 V p-p (VBS), with 75-ohm termination switch
DSK INSERT IN	BNC type × 1 1 V p-p (VS)
EXT WIPE IN	6-pin DIN × 1
Output signals	
VIDEO OUT 1 — 8	BNC type × 8 1 V p-p (VBS), 75 ohms, unbalaced (loop-through output of the corresponding VIDEO IN connector)
PGM OUT 1 - 3	BNC type × 3 1 V p-p (VBS), 75 ohms, unbalanced
PST OUT 1, 2	BNC type × 2 1 V p-p (VBS), 75 ohms, unbalanced
GEN LOCK OUT	BNC type × 1 (loop-through output of GEN LOCK IN connector)
DSP OUT	BNC type × 1 1 V p-p (VS), 75 ohms, unbalanced
BLACK BURST OUT 1 - 4	BNC type × 4 0.3 V/0.3 V p-p (BS), 75 ohms, unbalanced
Tally/intercom	TALLY/INTERCOM 1 — 4: 4-pin DIN × 4 TALLY/INTERCOM 5 — 8: CCJ connector (10 pin) × 1 Maximum pick-up value in a relay: 24 V 200 mA DC
Trigger	TRIGGER: Special minijack × 1 TAKE function by earth (OPEN: +5 V, impedance 65 kohms)
RS-232C	9600 baud (fixed), DTE (terminal), Signal level: ±9 V Protocol for SEG-2550/2550P
GPI	15 pin TAKE, DSK CUT IN/OUT function by earth (OPEN: +5 V)
Performance	
DG	Less than 1%
DP	Less than 1° (APL 10 - 90%)
Crosstalk (SEG-2550A: 3.58 MHz, SEG-2550AP: 4.43 MHz)	Over −50 dB
Frequency response	8 MHz ±0.5 dB
Signal to noise ratio	Over −60 dB
Power requirements	
SEG-2550A	120 V AC ±10%, 60 Hz±10%,
SEG-2550AP	220 - 240 V AC ±10%, 50/60 Hz ±10%
Power consumption	SEG-2550A: 82 W SEG-2550AP: 92 W
Operating temperature	0C° to 40C° (32°F to 104°F)
Dimensions	Approx. 481 × 155.5 × 310.4 mm (w/h/d) (19 × $6^{1}/_{8}$ × $12^{1}/_{4}$ inches)
Weight	Approx. 14.5 kg (31 lb 15 oz)
Supplied accessories	AC power cord .... 1 Wipe pattern list .... 1 CCJ connector for tally/intercom .... 1 Label .... 2 Connector cover for the GPI connector .... 1 Seal .... 1 set

Dimension diagram


28.5 (1 1/8)
424 (16 3/4)
28.5 (1 1/8)
465 (18 3/8)
37.6 (1 1/2)
89 (3 5/8)
57.2 (2 3/8)
89 (3 5/8)
37.6 (1 1/2)
Unit : mm (inches)
157.7 (6 1/4)
13.5 (9/16)
265.8 (10 1/2)
32.9 (15/16)
2 (3/32)
64 (2 5/8)
155.5 (6 1/8)
5 (7/32)

Design and specifications subject to change without notice.

RECOMMENDED EQUIPMENT AND ACCESSORIES

Color video camera DXC-1820/1820P, DXC-M3A/M3AP,
DXC-3000/3000P
Camera control unit CCU-1800/1800P, CCU-M3/M3P
Black and white camera AVC-D5/D5CE
Color video monitor PVM-1370/1370P, PVM series
Universal chroma keyer CRK-2000
Cables CCDD cables, CCF cables, UGC cables
RS-232C cable SMK-0031 (for SMC-70G/70GP)
RCC-30V (for BVE-900)
Microcomputer SMC-70G/70GP
NTSC superimposer SMI-7074
PAL superimposer SMI-7074P
Q-Manager
Wipe pattern extender WEX-2000/2000P
Editing control unit BVE-900
Protocol manual for the SEG-2550

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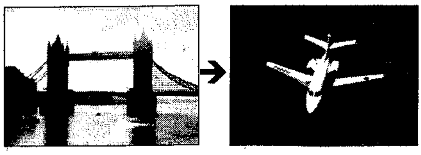
SECTION 1
GENERAL DESCRIPTION

1-1. INTRODUCTION

The Sony SEG-2550A/2550AP special effects generator can apply a wide variety of special effects, such as mixing, wiping, keying and downstream keying, to the video program from a camera, VTR, etc., and output the resulting program.
In addition to the basic functions, the SEG-2550A/2550AP can memorize the setting and operation of effects and reproduce them. This is called the "E-File" function. The operation using this E-File and the function of the downstream keyer can be controlled by the equipment connected to the GPI connector.
The SEG-2550A/2550AP can also be remotely controlled by a microcomputer or a VTR editing control unit through the RS-232C interface.
The built-in sync generator allows all equipment connected to the SEG-2550A/2550AP to be synchronized with the SEG-2550A/2550AP. The SEG-2550A/2550AP can synchronize with an external sync signal when it is supplied.

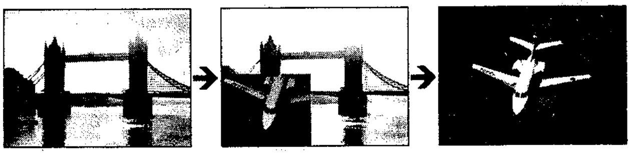
1-1-1. SPECIAL EFFECTS FUNCTION

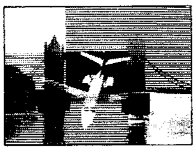
Cut
Instantaneous change from one picture to another during vertical blanking period is possible.



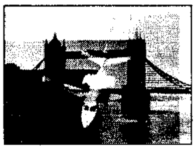
Mixing
Gradual transition by dissolving one picture into another is possible.

Wipe
Wipe function, a transition from one picture to another using a geometrical pattern moving across the screen, is provided. Wipe pattern can be selected from 137 patterns, and a variety of wipe effects such as pairing, echo, border and softness, are available.

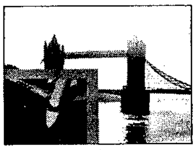




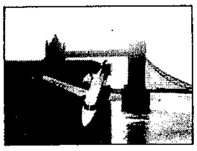
Pairing wipe



Echo wipe

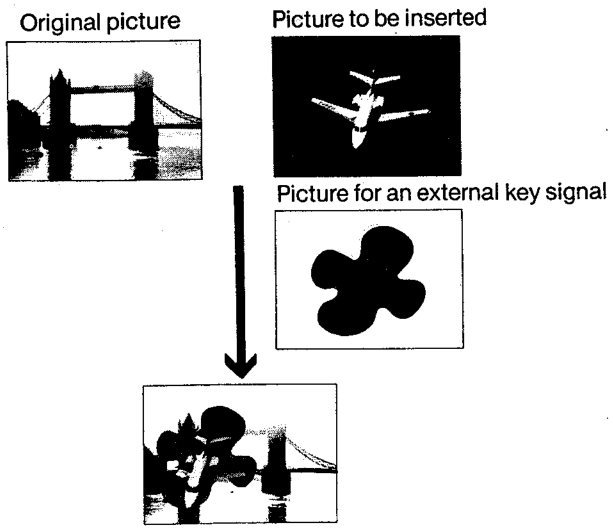


Border

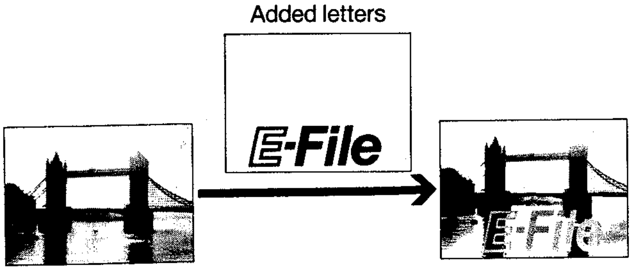


Softness

External key
A part of one picture is cut out, and that area can be filled with another picture. The part to be cut out is determined by the picture (an external key signal) picked up by a black and white camera for the external key operation.



Downstream keyer
Captions or figures can be added on a picture. This is called downstream keyer. Added letters and figures can be colored, or shadow is added to them for easier viewing.



Background color
A built-in background color generator permits color background for keying, for the border of the wipe pattern, etc. Hue, chroma and luminance of the background color are continuously adjustable so that a precise color can be obtained.

1-1-2. "E-File" FUNCTION

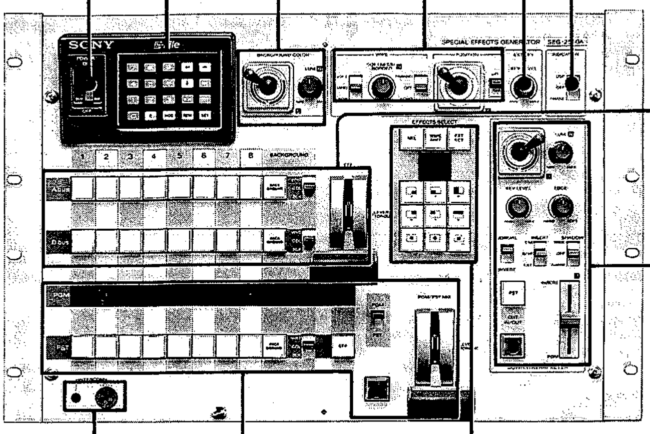
Memory of the setting on the SEG-2550A/2550AP
The setting on the control panel or the operating procedure of the SEG-2550A/2550AP can be held in the memory of the SEG-2550A/2550AP.
The data is held for about 24 hours after turning the power off.

Recall the data memorized in E-File and execution
The data memorized in the E-File can be recalled any time, and can be executed to reproduce the same effect.

Remote control
The SEG-2550A/2550AP is equipped with an RS-232C interface so that the effects can be executed in synchronization with the VTR editing control unit with this interface.

1-2. OUTLINE OF THE SEG-2550A/2550AP FUNCTIONS

For details, please refer to the pages indicated by the circled numbers.



1 **POWER switch** 1-48
The power of the SEG-2550A/2550AP is turned on and off.

2 **E-File section** 1-48
The setting and operating procedure of the SEG-2550A/2550AP is memorized, and the same condition is reproduced.

3 **BACKGROUND COLOR section** 1-49
Hue, chroma and luminance of the background color are adjusted.

4 **Wipe effects section** 1-50
The various wipe effects such as pairing, echo, border, softness and positioner, are controlled.

5 **EXT KEY LEVEL control** 1-50
Adjusts the key signal level for the external key operation.

6 **INDICATION switch** 1-51
Selects what is to be displayed on the preset monitor.

7 **A bus/B bus select section** 1-51
Selects pictures used for effects such as mixing, wipe, external key, and executes the effects.

8 **DOWNSTREAM KEYER section** 1-52
Letters or figures picked up by a black and white video camera or produced by the SMC-70G/70GP microcomputer are added on a picture. The added letters and figures can be colored.

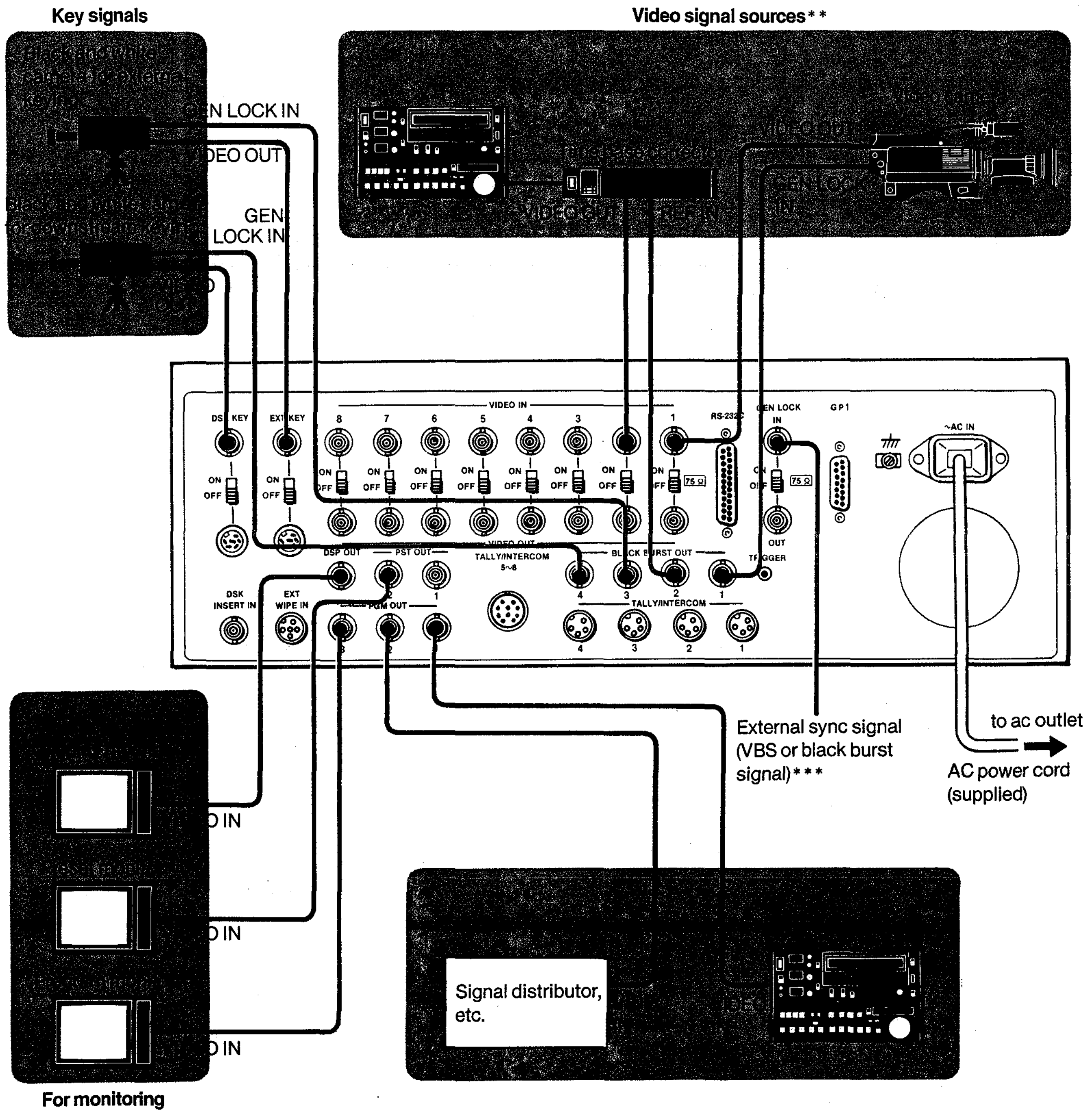
9 **EFFECTS SELECT section** 1-54
Selects the effects to be executed when EFFECTS is selected with the PGM/PST select block.

10 **PGM/PST select section** 1-55
Selects the program and preset pictures, and interchanges them by cut.

11 **INTERCOM section** 1-56
Connect a headset for the intercom system and adjust the volume.

1-3. PREPARATION

1-3-1. BASIC CONNECTIONS


Key signals
Video signal sources**
N LOCK IN
DEO OUT
GEN
LOCK IN
VIDEO OUT
REF IN
VIDEO IN
8
7
6
5
4
3
1
RS-232C
GEN LOCK IN
GP1
~AC IN
ON
OFF
75 Ω
OUT
DSP OUT
PST OUT
VIDEO OUT
TALLY/INTERCOM 5~8
BLACK BURST OUT
TRIGGER
DSK INSERT IN
EXT WIPE IN
PGM OUT
TALLY/INTERCOM
External sync signal (VBS or black burst signal)***
to ac outlet
AC power cord (supplied)
D IN
D IN
D IN
Signal distributor, etc.
For monitoring

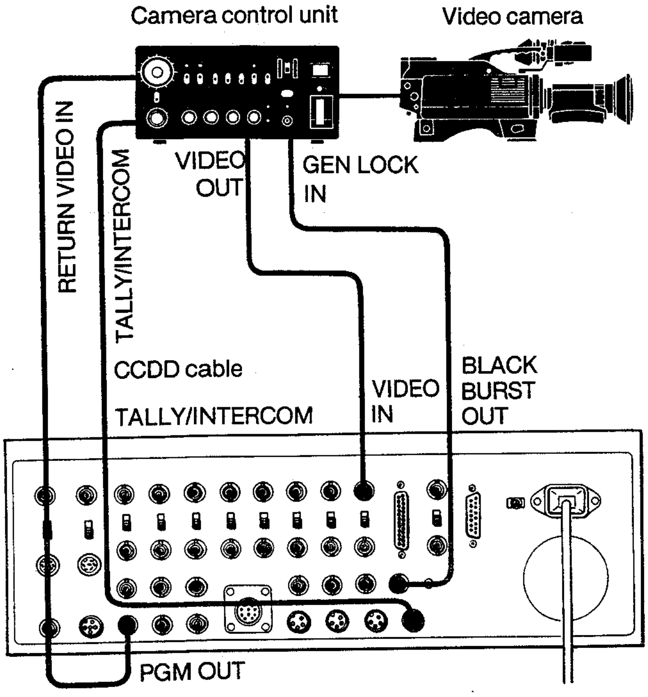
- For connections, the 75-ohm coaxial cables, 3C-2V, 5C-2V or equivalent should be used.

* *For downstream keying, an SMC-70G/70GP microcomputer can be used. For the connection of the SMC-70G/70GP, refer to "TO CONNECT AN SMC-70G/70GP AS A DOWNSTREAM KEYER".*

** Up to 8 video signal sources can be connected to any of the VIDEO IN 1 to 8 connectors.

*** To operate the SEG-2550A/2550AP with an external sync system, connect the external sync signal. When an external sync signal is connected, the phase of the output signal of the SEG-2550A/2550AP should be adjusted to the phase of the external sync signal. Before operating the unit, adjust the phase referring "ADJUSTING THE SC AND H PHASES".

1-3-2. TO CONNECT A CAMERA USING A CAMERA CONTROL UNIT


Camera control unit
Video camera
RETURN VIDEO IN
TALLY/INTERCOM
VIDEO OUT
GEN LOCK IN
CCDD cable
TALLY/INTERCOM
VIDEO IN
BLACK BURST OUT
PGM OUT

MONITORS TO BE USED

Display, program and preset monitors show the following pictures.

Display monitor
The data of the E-File and the information for E-File operation are displayed. (For details on E-File, refer to "OPERATION USING "E-File"".)

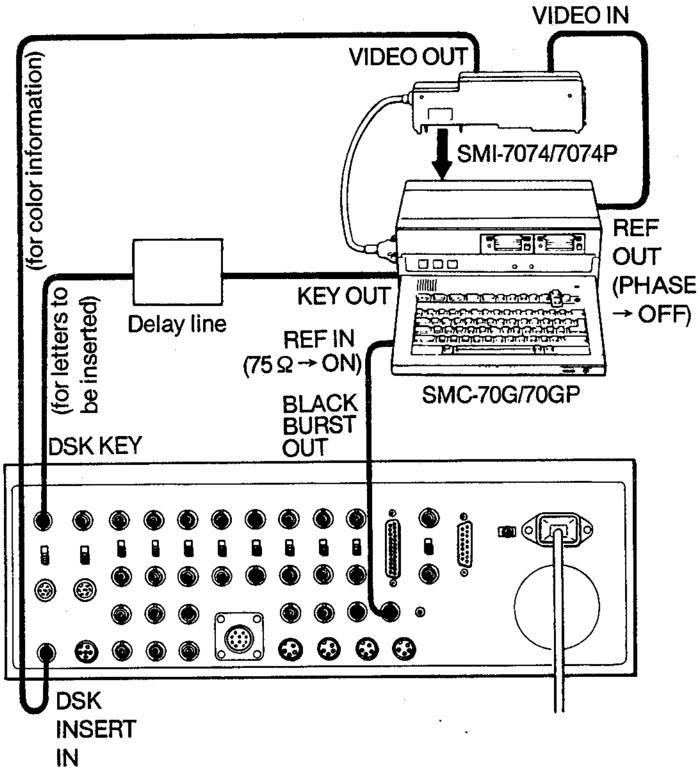
Program monitor
A final picture to be recorded or sent to the next stage (program picture) is displayed.

Preset monitor
The next program picture is displayed. This monitor is used to check the picture or to rehearse the effects.

Note on connection cables
For connections other than tally/intercom, the 75-ohm coaxial cables, 3C-2V, 5C-2V or equivalent should be used.

1-3-3. TO CONNECT AN SMC-70G/70GP FOR DOWNSTREAM KEYER

When an SMC-70G/70GP microcomputer is connected, letters for downstream keyer can be inserted by the SMC-70G/70GP. The SMI-7074 NTSC superimposer or the SMI-7074P PAL superimposer is necessary for the SMC-70G/70GP. The key signal should be delayed by about. 0.5 μsecond using a delay line (available locally).

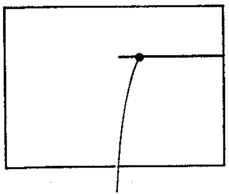

VIDEO IN
VIDEO OUT
SMI-7074/7074P
(for color information)
REF OUT (PHASE → OFF)
KEY OUT
Delay line
(for letters to be inserted)
REF IN (75 Ω → ON)
BLACK BURST OUT
SMC-70G/70GP
DSK KEY
DSK INSERT IN

1-3-4. ADJUSTMENTS OF CONNECTED EQUIPMENT

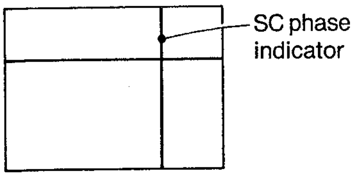
Adjust the phases, video level, hue, chroma level, etc., of the connected cameras and VTRs.

1 Adjust the phases of all equipment as follows.

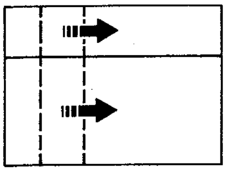
1) Turn the power of all equipment on.
2) Turn the SEG-2550A/2550AP on.
3) Set the PGM/PST selector to PGM.
4) Set the INDICATION selector to PHASE.
   The phase indication lines will appear on the preset monitor screen.



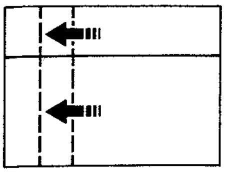
5) Press the 1 button of the PST select buttons.
6) Turn the H phase control on the equipment connected to the VIDEO IN 1 connector so that the left and right H phase indicators appear.



7) Turn the SC phase control on the same equipment so that the SC phase indicator moves to the left; when it reaches the leftmost position, the indicator is split into two lines, the right one moving to the right.



8) Turn the SC phase control so that the right line moves to the left to become one line with the left line.



The adjustment of the phases of the equipment connected to the VIDEO IN 1 connector is finished.

- For the equipment connected to the VIDEO IN 2 through 8 connectors, repeat steps 5), 6), 7) and 8).
- Be sure to adjust the H phase first, then the SC phase.

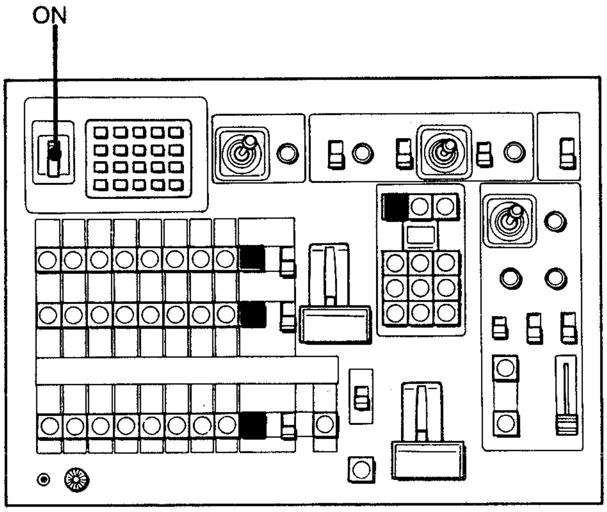
2 Adjust the color of the video monitors.
Use the color bars generated by the video camera or the camera control unit to adjust the hue so that the same color will be obtained on all video monitors.

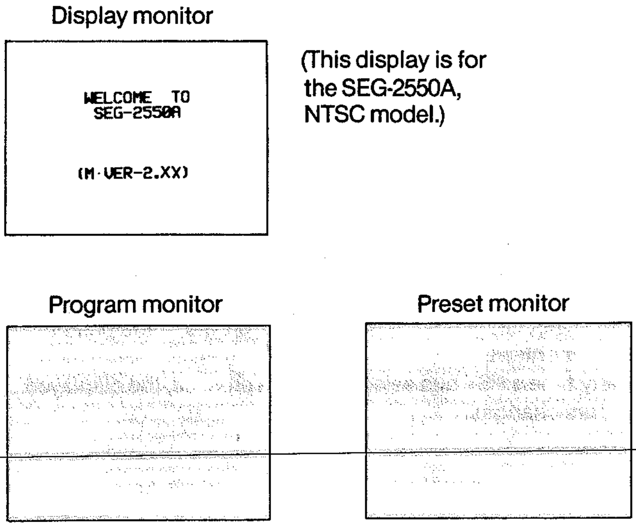
3 Adjust the level—video output level, pedestal level, chroma level, hue, etc.—of all equipment so that the same level is obtained.

1-4. START

This section introduces the basic operation such as changing a picture by cut, mixing or wipe and inserting a picture into another picture (keying), etc.

Check that the power and equipment to be used are correctly connected, and set the POWER switch to ON. The power is turned on, and the buttons on the operation panel are lit as shown below.





WELCOME TO
SEG-2550A

(M·VER-2.XX)

(This display is for the SEG-2550A, NTSC model.)

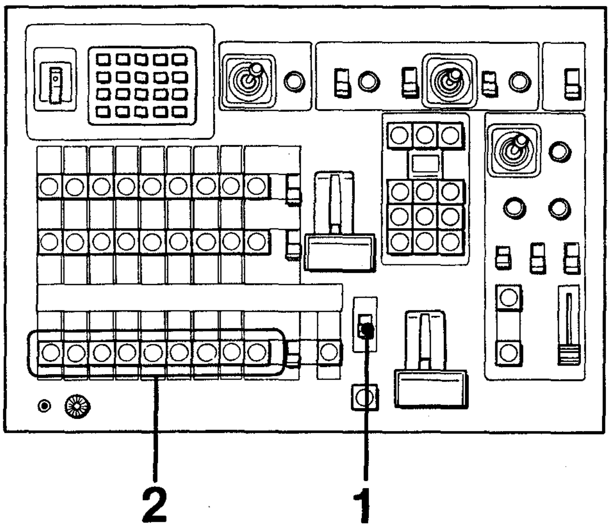
Figure 1 Screens when the power is turned on

1-5. CUT

Cut is the method to instantaneously change a picture to the next one. Cut can be executed by pressing a PST bus select button or the TAKE button.

1-5-1. CUT WITH THE PST BUS SELECT BUTTONS

The picture selected by a PST bus select button is displayed on the program and preset monitors, and changed to the next picture simultaneously.



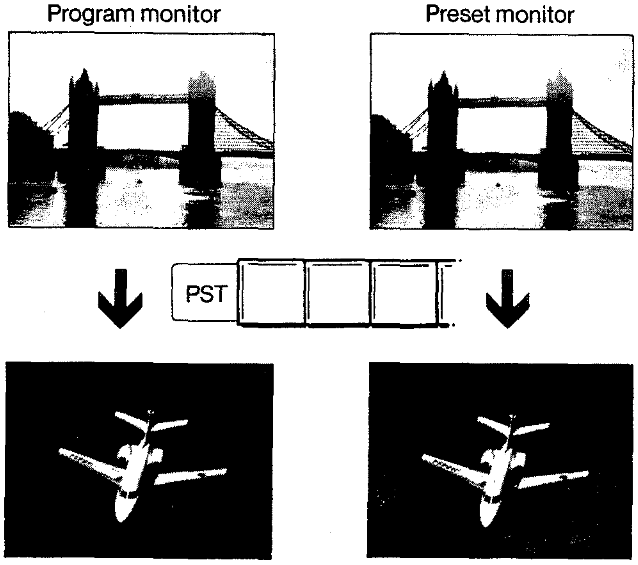


Figure 2 ***Cut with the PST bus select buttons***

1 Set the PGM/PST selector to PGM.

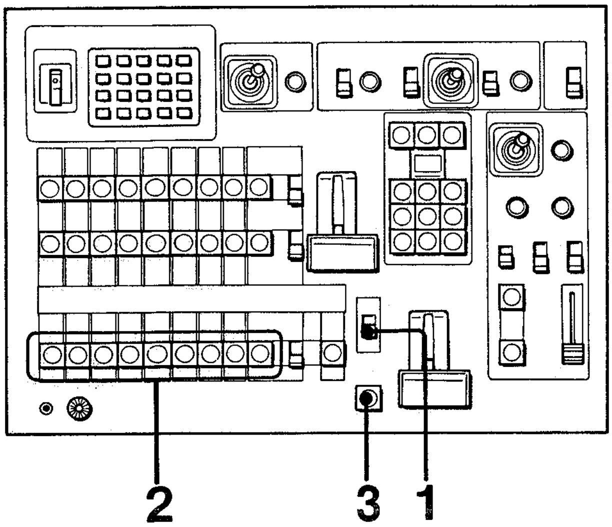
2 Select a desired picture by pressing a PST bus select button.

The pressed button lights, and the figure of the PGM indicators corresponding to the button also lights. The selected picture appears on the program and preset monitors.

Every time a PST bus select button is pressed, the displayed picture changes.

1-5-2. CUT WITH THE TAKE BUTTON

The picture on the preset monitor will be the next program picture. The picture can be checked on the preset monitor.



1 Set the PGM/PST selector to PST.

2 Select a desired picture by pressing a PST bus select button.
The pressed button lights, and the selected picture appears on the preset monitor.

3 Press the TAKE button.
The pictures on the preset monitor and program monitor are interchanged, and the indication of the PGM indicator and the PST bus select button are also changed.

Repeat steps 2 and 3 to continue the cut operation.

- The PGM/PST MIX lever should be set at either end, or the pictures on the preset monitor and program monitor are mixed.

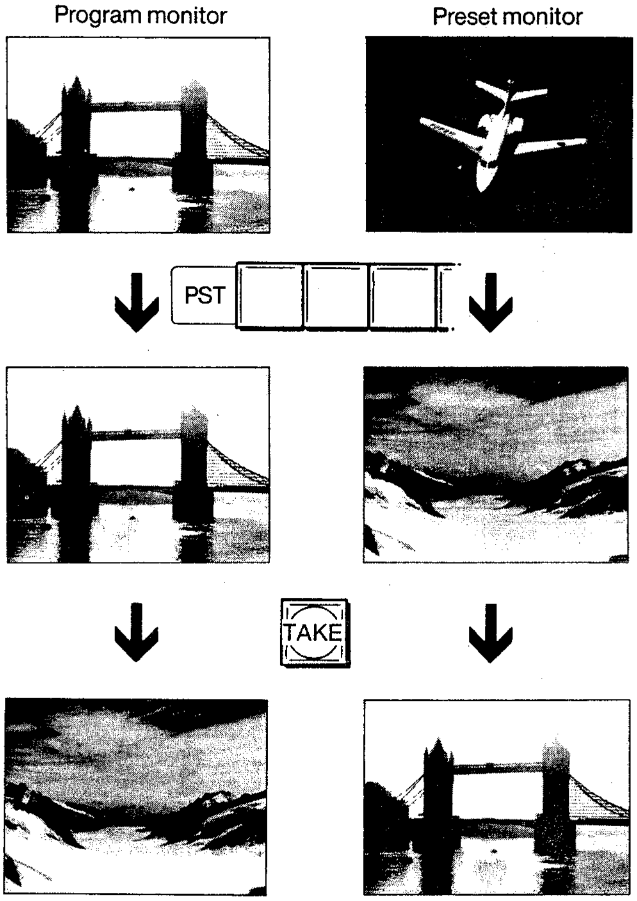


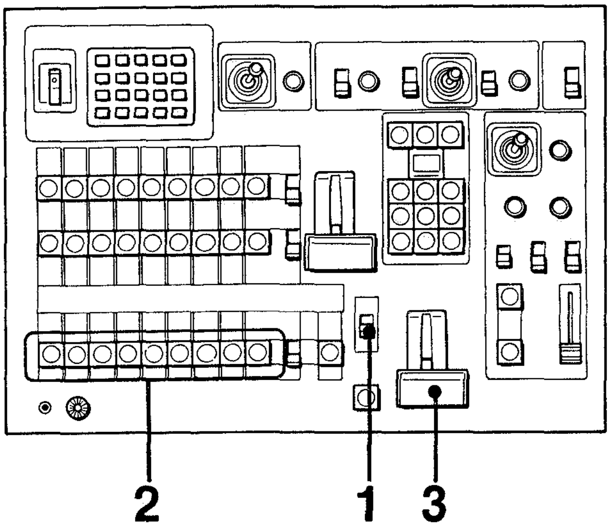
Figure 3 Cut with the TAKE button

1-6. MIXING

Mixing is the effect of slow transition that one picture dissolves into another. Mixing is executed by the PGM/PST MIX lever or by the EFF lever.

1-6-1. MIXING WITH THE PGM/PST MIX LEVER

The program picture is gradually changed to the preset picture.



1 Set the PGM/PST selector to PST.

2 Select a desired picture by pressing a PST bus select button.
The pressed button lights, and the selected picture appears on the preset monitor.

3 Move PGM/PST MIX lever to the other end.
The pictures on the program monitor and preset monitor are mixed and gradually interchanged.

Repeat steps 2 and 3 to continue the mixing operation.

- The uppermost and the lowermost positions of the PGM/PST MIX lever are not assigned to either the program or preset picture. The pictures will be interchanged each time the lever is moved from one position to the other.
- The speed of the interchange depends on how fast the lever is moved.
- When the BACKGROUND button of the PST bus select buttons is pressed, select the color by the BACKGROUND COLOR stick and LUM control. For details, refer to "HOW TO SELECT THE BACKGROUND COLOR".

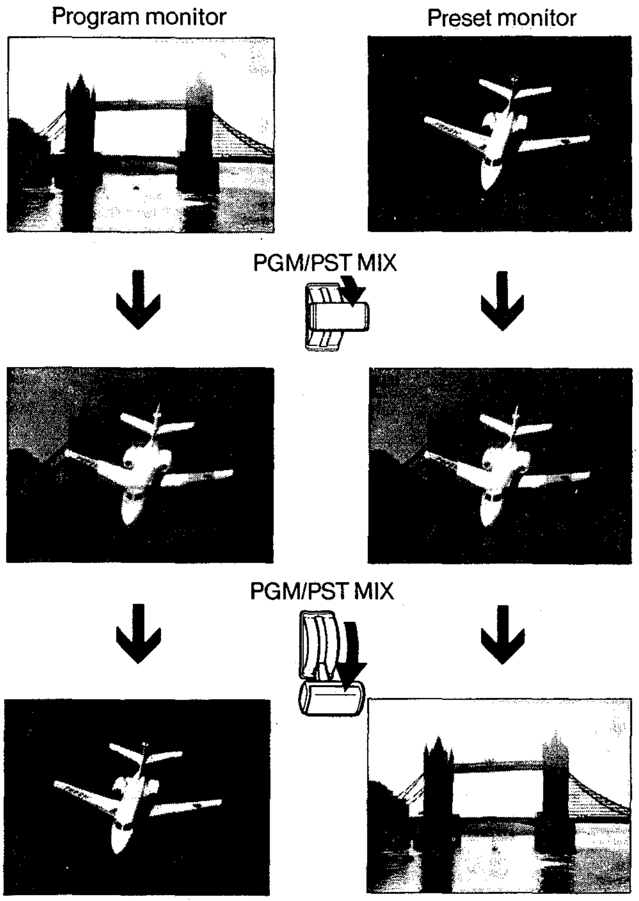
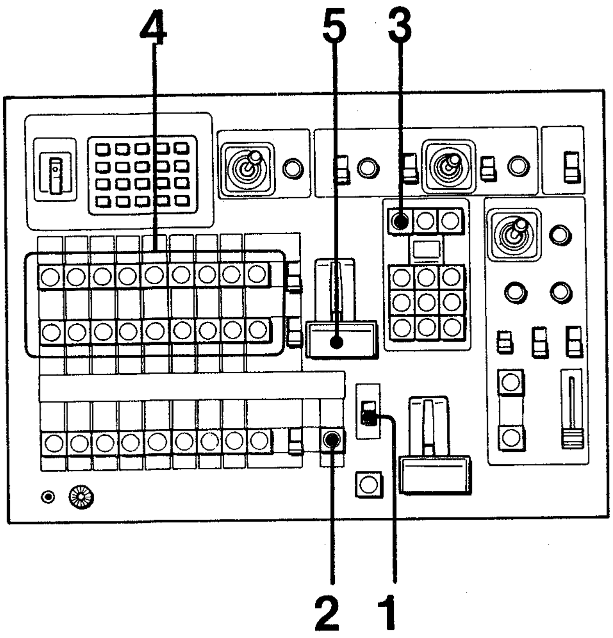


Figure 4 Mixing with the PGM/PST MIX lever

1-6-2. MIXING WITH THE EFF LEVER

The pictures selected by the A bus select buttons and B bus select buttons are gradually interchaged.
Rehearsal can be done on a preset monitor. For details on the rehearsal, refer to “REHEARSAL”.



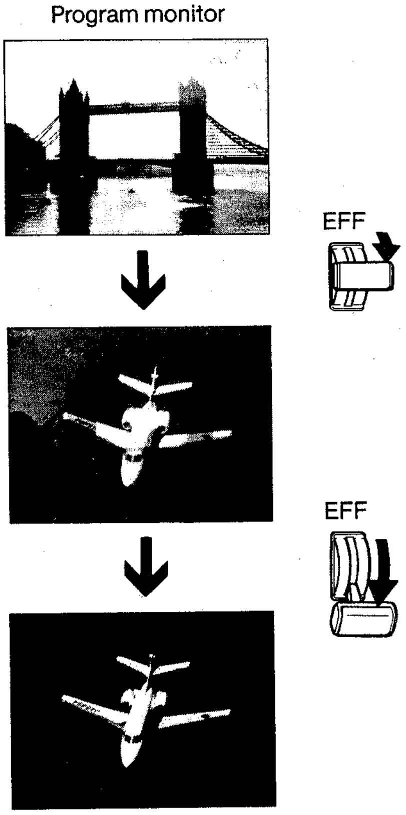


Figure 5 **Mixing with the EFF lever**

1 Set the PGM/PST selector to PGM.

2 Press the EFF button of the PST bus select buttons.
The EFF button and EFFECTS indicator light.

3 Press the MIX button.
The MIX button lights.

4 Select pictures by pressing an A bus select button and a B bus select button.

5 Move the EFF lever to the other end.
The next picture will appear being dissolved into the program picture.

- The button which corresponds to the program picture blinks.
- The speed of the interchange depends on how fast the lever is moved.

REHEARSAL

Before recording or sending the final picture, rehearsal can be done on the preset monitor. Then you can check the effect in advance. To rehearse the effects, proceed as follows.

1 Set the PGM/PST selector to PST.

2 Perform the procedure of the desired effect for rehearsal.
You can check the result of the effect on the preset monitor.

3 After the effect is confirmed, press the TAKE button or move the PGM/PST MIX lever to the other end so that the picture on the preset monitor will become the program picture.

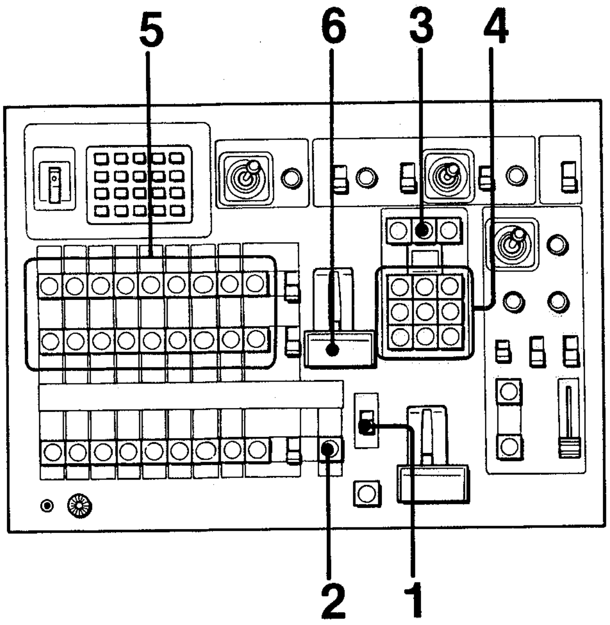
4 Perform the desired effect again (moving the EFF lever, pressing the EXT KEY button, etc.), and the final picture will be supplied from the PGM OUT connector.

1-7. WIPE

A wipe is changing one picture to another by revealing the new picture with a geometrical pattern (wipe pattern) moving across the screen. You can select a wipe pattern from 137 patterns. Nine patterns among them can be selected by simply pressing a pattern select button, and the remaining 128 patterns are selected with the pattern codes.

1-7-1. OPERATION USING THE PATTERN SELECT BUTTONS

To select a wipe pattern by simply pressing a wipe pattern select button, proceed as follows.



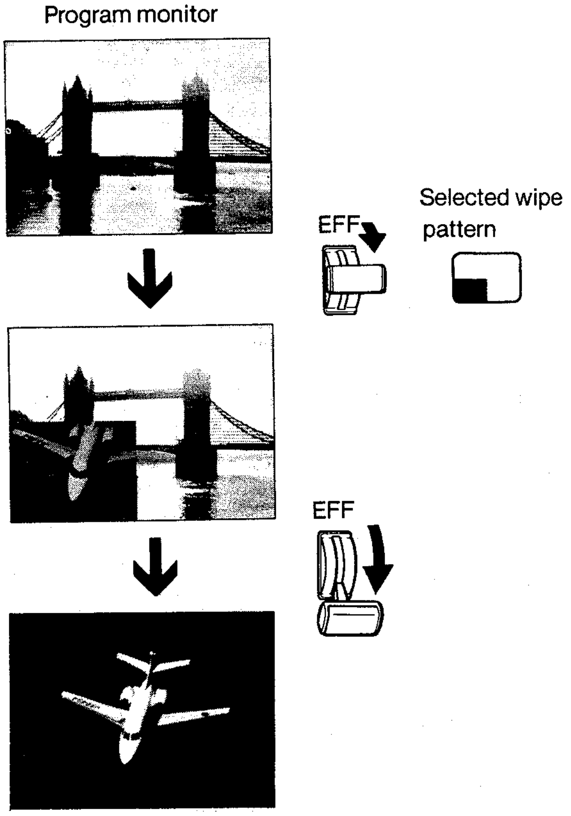


Figure 6 **Wipe**

1 Set the PGM/PST selector to PGM.

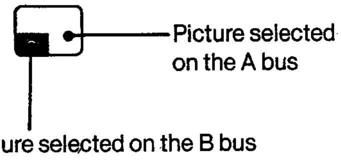
2 Press the EFF button of the PST bus select buttons.
The EFF button and EFFECTS indicator light.

3 Press the WIPE button.
The WIPE button and the upper left button of the wipe pattern select buttons light.

4 Select a desired wipe pattern by pressing a wipe pattern select button.
The pressed button lights.
- To select the pattern with the pattern code, refer to "TO SELECT WIPE PATTERN WITH THE PATTERN CODES".

5 Select the pictures by pressing an A bus select button and a B bus select button.

- The black or colored part of the pattern is for the picture selected on the B bus, and the white part is for the picture selected on the A bus.

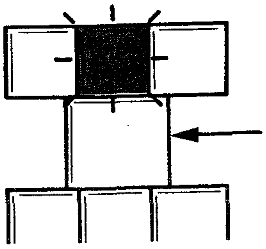

Picture selected on the A bus
Picture selected on the B bus

6 Move the EFF lever to the other end.
The program picture will be wiped by the selected wipe pattern.

- The button which corresponds to the program picture blinks.
- The speed of the interchange depends on how fast the lever is moved.

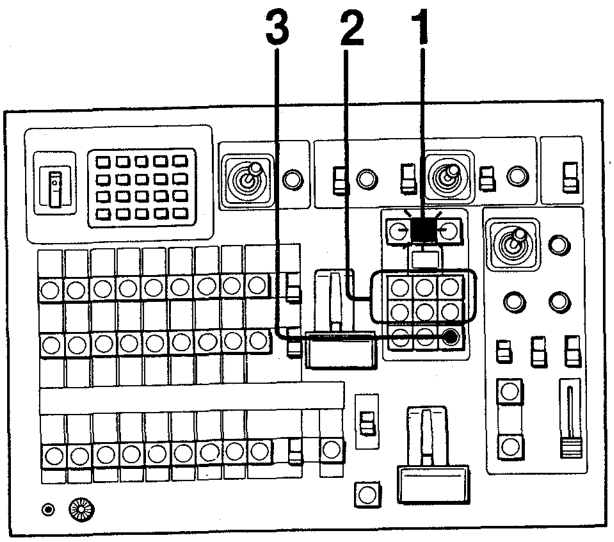
1-7-2. TO SELECT WIPE PATTERNS WITH PATTERN CODS

The desired wipe pattern can be selected by two methods. One is to select the pattern by pressing a pattern code select button. The other is to select the pattern by designating the pattern code. The two methods change cyclically every time the WIPE button is pressed.
When the figure is displayed in the pattern code indication window, a wipe pattern is selected by the pattern code : When the figure is not displayed, a wipe pattern is selected by pressing a wipe pattern select button. The wipe pattern and the pattern code are shown in "TABLE OF WIPE PATTERNS" at the end of this manual, or the supplied WIPE PATTERN LIST.



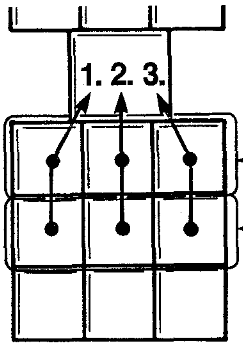
When a figure is displayed:
Selection with the pattern code
When a figure is not displayed:
Selection with a wipe pattern select button

To select a desired wipe pattern with the pattern code, proceed as follows. The other operating procedure is the same as that using the wipe pattern select buttons.



1 Press the WIPE button until the figures appear in the pattern code indication window.
The M button at the right lower end of the wipe pattern select buttons lights.

2 Press the upper two-row buttons of the wipe select buttons until the desired pattern code appears in the window.
The M button and the dots on the right of each figure start blinking.
Three buttons of each row correspond to right, center and left digits in the window.



Press these buttons to increase the figure.

Press these buttons to decrease the figure.

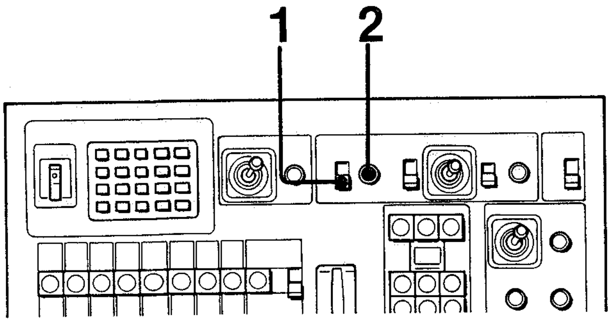
3 Press the M button.
Blinking of the M button and the dots in the window stops, and the designated pattern is selected.

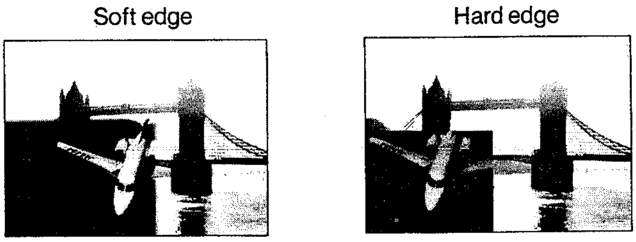
- When the figure which has not the corresponding wipe pattern is designated, the M button and the dots in the window remains blinking, and the wipe pattern cannot be selected.

Note on wipe patterns of pattern code 300 to 307
When the wipe patterns of pattern code 300 to 307 (mosaic wipe) are selected and the unit is remotely controlled by external equipment such as an BVE-900, it is not possible to wipe at the speed of 8 frames or faster.

1-7-3. SOFTNESS (to soften the wipe pattern edge)

The wipe pattern edge can be softened. The softness can be adjusted with the SOFTNESS/BORDER control.




Soft edge

Hard edge

Figure 7 Softness of wipe pattern edge

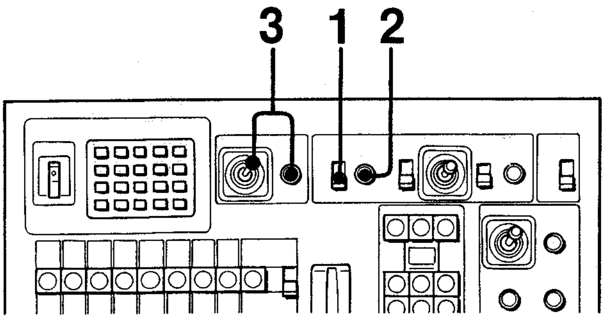
1 Set the SOFT/HARD/BDR selector to SOFT.

2 Turn the SOFTNESS/BORDER control to adjust the softness.

- To obtain the hard edge, set the selector to HARD.

1-7-4. BORDER (to add a border to the wipe pattern edge)

You can border the wipe pattern edge, and color the border.



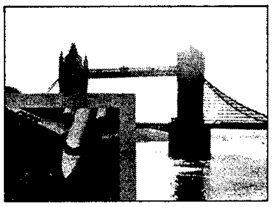


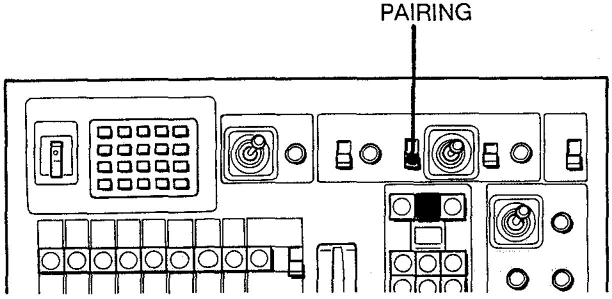
Figure 8 Bordered wipe pattern edge

1 Set the SOFT/HARD/BDR selector to BDR.
The edge of the wipe pattern is bordered.

2 Turn the SOFTNESS/BORDER control to adjust the width of the border.

3 Adjust the color of the border by the BACKGROUND COLOR stick and the LUM control.
The adjusting method is the same as the background color, and the color will be the complementary color of the background color. For details, refer to "HOW TO SELECT THE BACKGROUND COLOR".

1-7-5. PAIRING WIPE (to wipe the picture in a grill format)



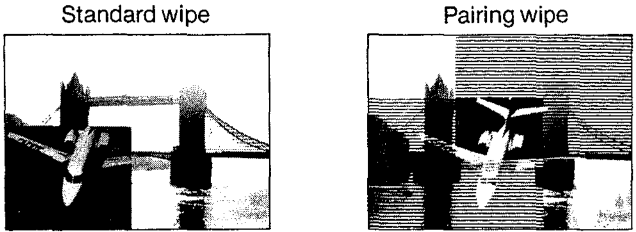
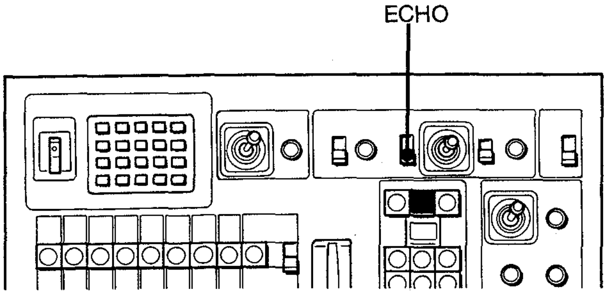

Standard wipe
Pairing wipe

Figure 9 Pairing wipe

In the pairing wipe, the wipe operation is performed in a grill format from opposite ends of the screen. In other words, pairs of scanning lines wipe the picture alternately from either end. To perform pairing wipe, set the PAIRING/ECHO selector to PAIRING.

- The pairing wipe is valid with some patterns. Please refer to "TABLE OF WIPE PATTERNS" for the patterns in which pairing wipe is available.

1-7-6. ECHO WIPE (to wipe the picture gradually)



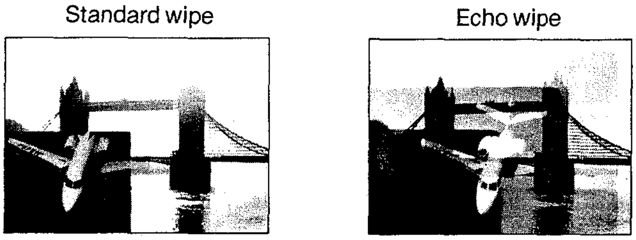

Standard wipe
Echo wipe

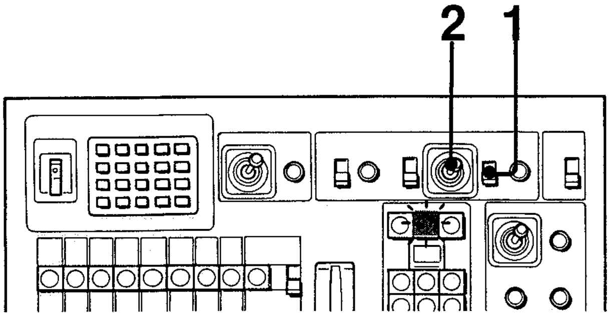
Figure 10 Echo wipe

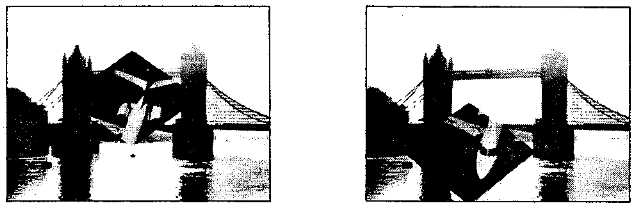
In the echo wipe, the new picture will be overlapped on the original picture in several steps of gradation at the wipe pattern edge.
To perform echo wipe, set the PAIRING/ECHO selector to ECHO.

- The echo wipe is valid with some patterns. Please refer to "TABLE OF WIPE PATTERNS" for the patterns in which echo wipe is available.

1-7-7. POSITIONER (to position the wipe pattern)

You can set the center of the wipe pattern to any position on the screen by maneuvering the POSITION stick.




Standard position

Center of the pattern moved

Figure 11 Wipe with positioner

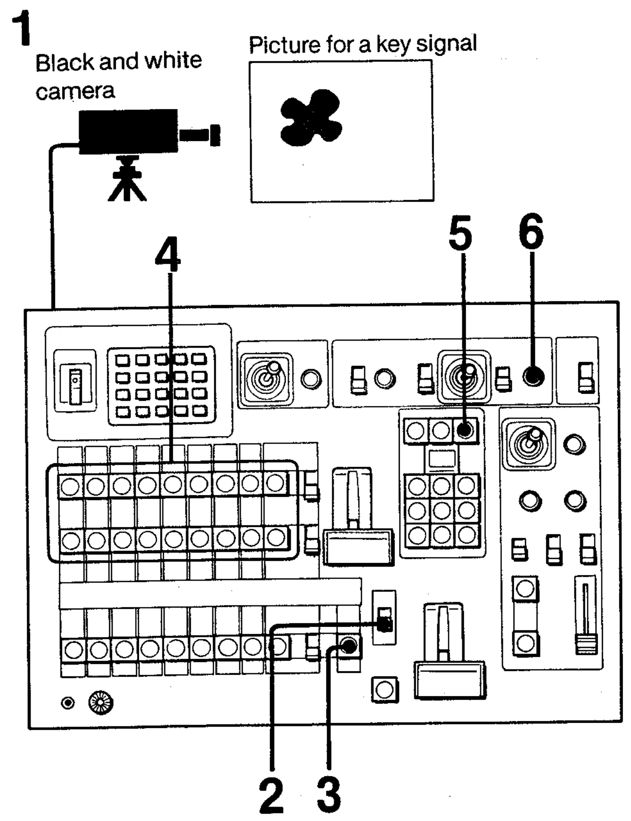
1 Set the POSITION switch to ON.

2 Maneuver the POSITION stick so that the center of the wipe pattern is settled at the desired position.

- The positioning control is valid with only a few patterns. Please refer to "TABLE OF WIPE PATTERNS" for the patterns whose position can be changed.

1-8. EXTERNAL KEY

A part of one picture is cut out, and another picture is inserted into the cut-out part. The part to be cut out is designated by the picture picked up by a black and white camera connected to the EXT KEY connector. This is called "external keying". The signal picked up by the black and white camera is called a key signal.


1
Black and white camera
Picture for a key signal
4
5
6
2
3

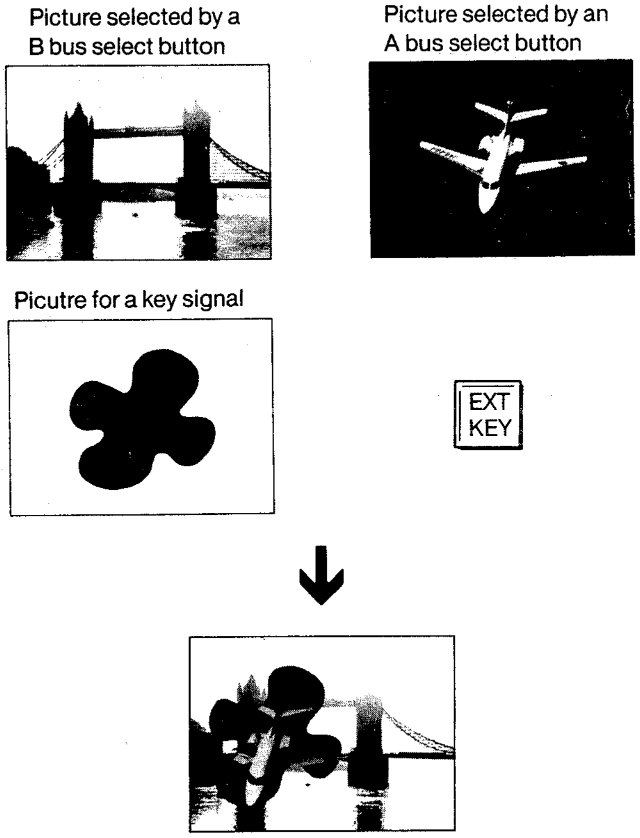

Picture selected by a B bus select button
Picture selected by an A bus select button
Picutre for a key signal
EXT KEY

Figure 12 **External key**

1 Pick up the pattern for an external key signal, and adjust the focus, size and position.

2 Set the PGM/PST selector to PGM.

3 Press the EFF button of the PST select buttons.
The EFF button and the EFFECTS indicator will light.

4 Select the pictures by pressing an A bus select button and a B bus select button.

5 Press the EXT KEY button.
The picture selected by a A bus select button is inserted into the picture on the program monitor.

6 Turn the EXT KEY LEVEL control until the outline of the inserted picture will be clear.
If necessary, adjust the size and position of the inserted picture.

Special effects of the external key signal
When an appropriate picture is connected to the EXT KEY connector instead of the picture for a key signal, special effects such as a photograph with high contrast is obtained. The tone of the picture can be adjusted with the EXT KEY LEVEL control.

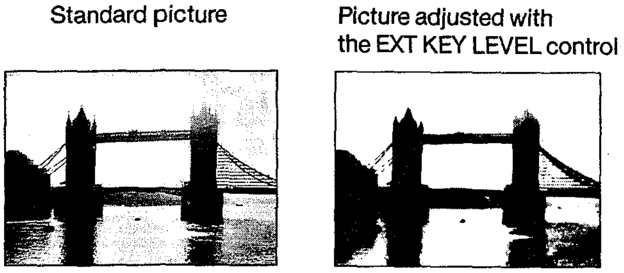


Figure 13 **Special effects of the external key signal**

The softness and border effects of wipe can be added to this picture. When the softness effect is used, the tone of the picture is softened, and when the border effect is used, the picture is bordered. The color of border is only black.
The background color can also be adjusted, which changes the color on the screen.

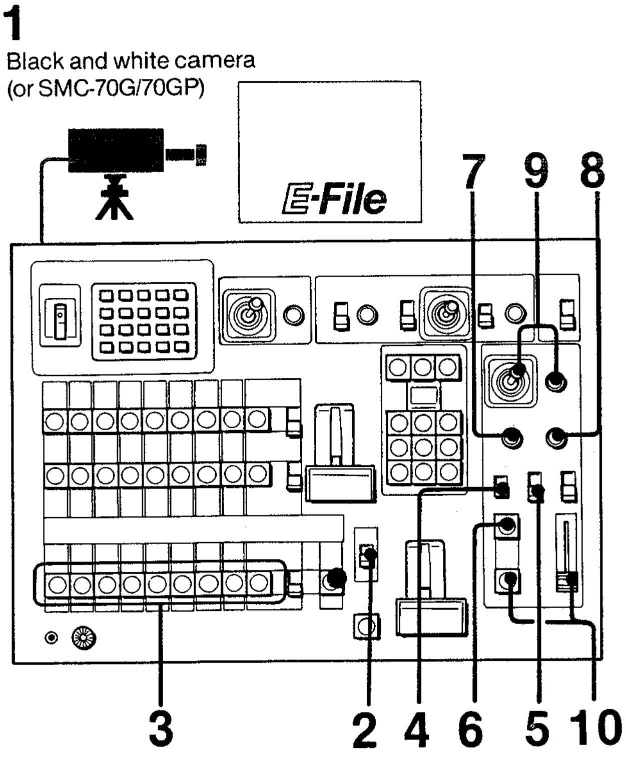
Note

The effects may depend upon the quality of the picture to be used. Use the high quality picture as much as possible.

1-9. DOWNSTREAM KEYER

The captions or figures can be inserted into the picture. This is called "downstream keying". The captions and figures are picked up by a black and white camera connected to the DSK KEY connector, and are colored by the built-in color matte generator.
The characters from an SMC-70G/70GP microcomputer is also inserted into the picture by the downstream keyer. In this case an SMI-7074 NTSC superimposer or a SMI-7074P PAL superimposer is necessary on the SMC-70G/70GP. The character color of the SMC-70G/70G can be used as it is, or selected by the color matte generator built-in the SEG-2550A/2550AP.

1-9-1. OPERATION



1 Pick up the captions and characters by a black and white camera, and adjust the focus, size and inserted position. When the SMC-70G/70GP is used, prepare the SMC-70G/70GP. For details, refer to the instruction manuals furnished with the related devices and software.

2 Set the PGM/PST selector to PGM.

3 Select a picture on which the captions are to be inserted by pressing a PST bus select button.
The pressed button lights.

4 Set the NORMAL/INVERT selector as follows:
When black characters on a white paper are inserted: NORMAL
When white characters on a black paper are inserted: INVERT

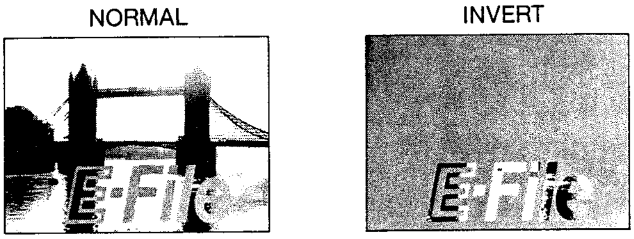


Figure 14 **Setting of the NORMAL/INVERT selector**

5 Set the INSERT switch as follows to designate the color of the inserted characters.
Monochrome characters: B/W
Colored by the color matte generator: CM
Color from the SMC-70G/70GP as it is: EXT

6 Press the PST CUT IN/OUT button.
The button will light, and the characters are added on the picture on the preset monitor.
If necessary, adjust the size and position of the inserted characters.

7 Turn the KEY LEVEL control so that the inserted characters will be clear.

8 Turn the EDGE control so that the flicker at the edge of the characters will stop.
This step is not necessary for the characters from the SMC-70G/70GP.

9 Adjust the color with the COLOR MATTE stick and LUM control when the CM is selected in step 5.
The adjusting method is the same as that of the background color. Refer to "HOW TO SELECT THE BACKGROUND COLOR"

10 Insert the characters into the program picture with the PGM CUT IN/OUT button or INSERT lever.

To insert the characters instantaneously (Cut in)
Press the PGM CUT IN/OUT button. The button lights, and the characters are instantaneously inserted into the picture.

To insert the characters gradually (Fade in)
Move the INSERT lever from the PGM position to the INSERT position. When the lever is started to move, the PGM CUT IN/OUT button lights.

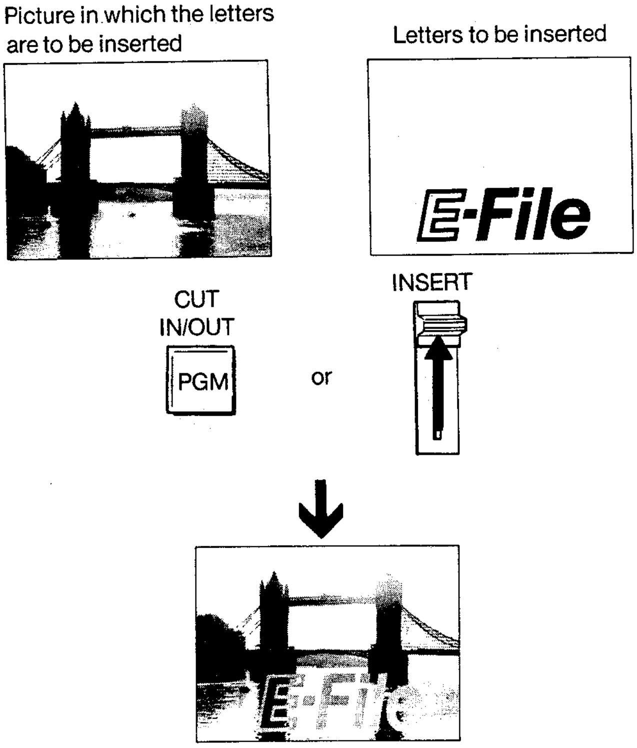


Figure 15 Downstream keyer

1-9-2. TO DELETE THE INSERTED LETTERS

To delete the inserted letters on the preset monitor
Press the PST CUT IN/OUT button. The added letters disappear and the button will go out.

To delete the inserted letters on the program monitor

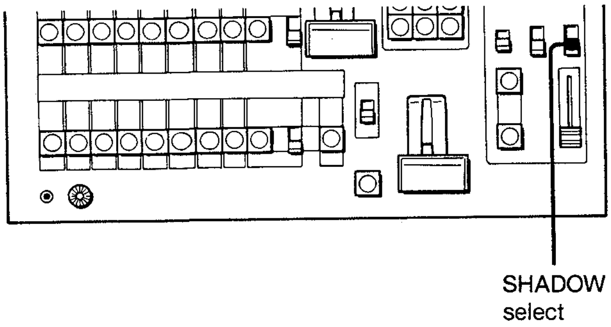
To delete instantaneously (Cut out)
Press the PGM CUT IN/OUT button. The inserted letters disappear and the button goes out.

To delete gradually (Fade out)
Move the INSERT lever from the INSERT position to the PGM position. At the PGM position, the PGM CUT IN/OUT button goes out.

1-9-3. TO ADD SHADOW TO THE INSERTED LETTERS

The addition of shadows to the inserted letters may make the display of letters more effective, especially when inserting white letters or figures into a light picture.
Set the SHADOW selector as follows.

To add a wide shadow : WIDE
To add a narrow shadow : NARW
No shadow : OFF



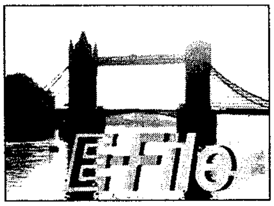
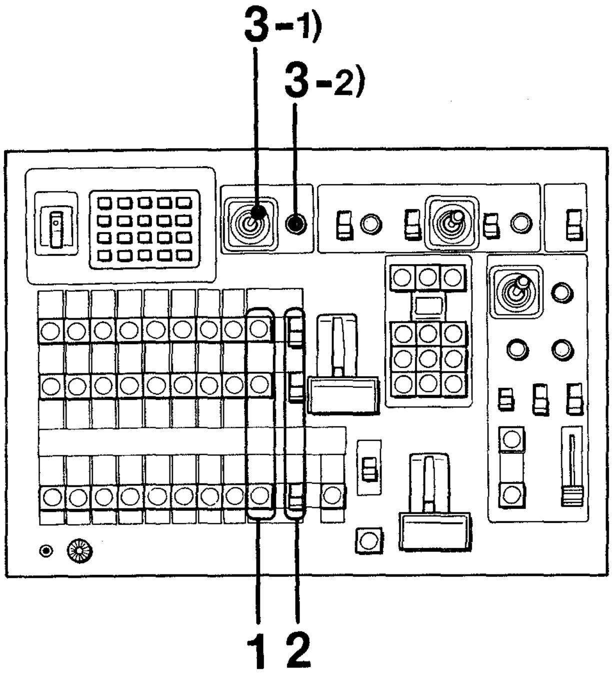


Figure 16 **Shadow effects**

1-10. HOW TO SELECT THE BACKGROUND COLOR

When the BACKGROUND button of the PST bus select buttons, A bus select buttons or B bus select buttons is pressed, the screen will be white, black or colored instead that the picture is displayed. This is called background. The color of the background is selected as follows :

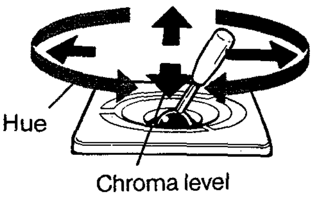


1 Press the BACKGROUND button.
The button lights.

2 Set the BACKGROUND selector as follows :
For a white background : WHT
For a colored background : COL
For a black background : BLK

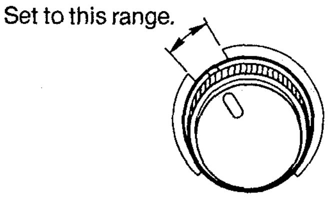
3 When COL is selected in step 2, adjust the color as follows :

1) Adjust the hue and chroma level with the BACKGROUND stick.
To adjust hue : Turn the BACKGROUND stick.
To adjust the chroma level : Tilt the BACKGROUND stick.



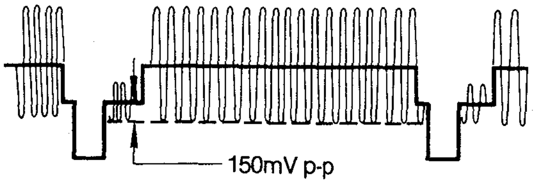
2) Adjust the luminance by turning the LUM control.
Normally set the control within the range illustrated below.

- To set the LUM control outside the indicated range, be sure to monitor the waveform with a waveform monitor.



CAUTION

When using highly saturated color matting, check (on a waveform monitor) that the chroma level does not fall below the value shown in the illustration below. If the LUM control is turned counterclockwise with the chroma level high, picture fluctuation may occur on the equipment connected to the SEG-2550A/2550AP.



1-11. APPLICATIONS

1-11-1. EXAMPLES OF VARIOUS EFFECTS

The following example shows how to use the effects in producing a program.

Example 1

1. Title screen is made by designating the color with the background color and by inserting the title with the downstream keyer.
2. Change the background color to another picture by mixing.
3. Delete the title with the fade-out of downstream keyer.
4. Insert a picture in the displayed picture with external key. (For example to display the current scene and the previous scene simultaneously.)

Example 2

1. In a part of a picture, insert a picture by wipe with positioner.
2. Remain the inserted picture in step 1, change the original picture to background color by cut.
3. Insert the end title into the picture in step 2 with the fade- in of downstream keyer.
4. Fade out to black background by mixing.

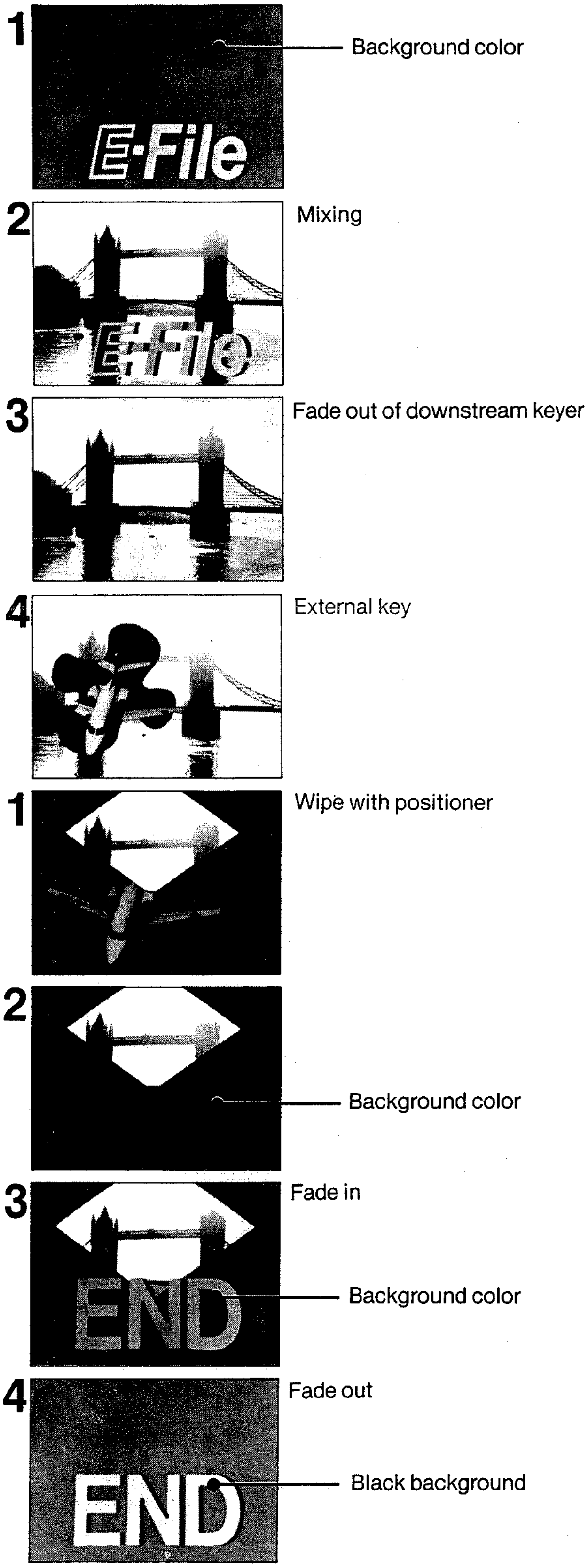
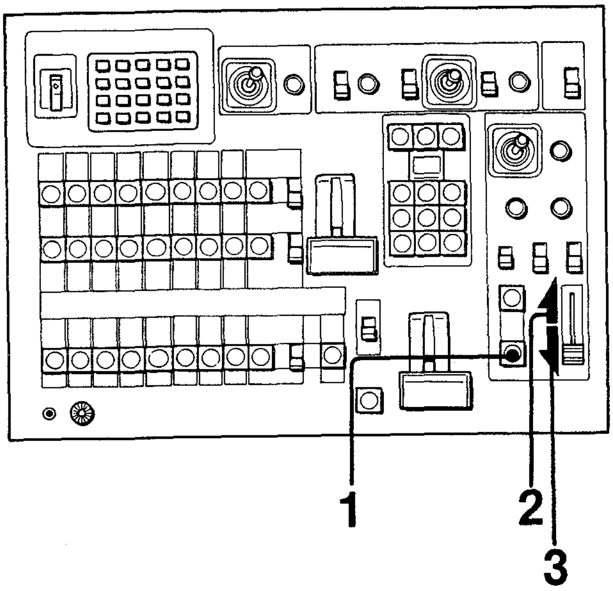

1
Background color
E-File
2
Mixing
3
Fade out of downstream keyer
4
External key
1
Wipe with positioner
2
Background color
3
Fade in
END
Background color
4
Fade out
END
Black background

Figure 17 Examples of effects

1-11-2. CONBINATION USE OF PGM CUT IN/OUT BUTTON AND INSERT LEVER

In downstream keyer, the letters are instantaneously inserted (Cut-in) or deleted (Cut-out) every time the PGM CUT IN/OUT button is pressed. While with the INSERT lever, the letters are gradually added (Fade-in) or deleted (Fade-out) when it is moved from one end to the other.
The combination use of the PGM CUT IN/OUT button and INSERT lever makes it possible to obtain such effects as Cut-in/Fade-out or Fade-in/Cut-out.

Cut-in/Fade-out

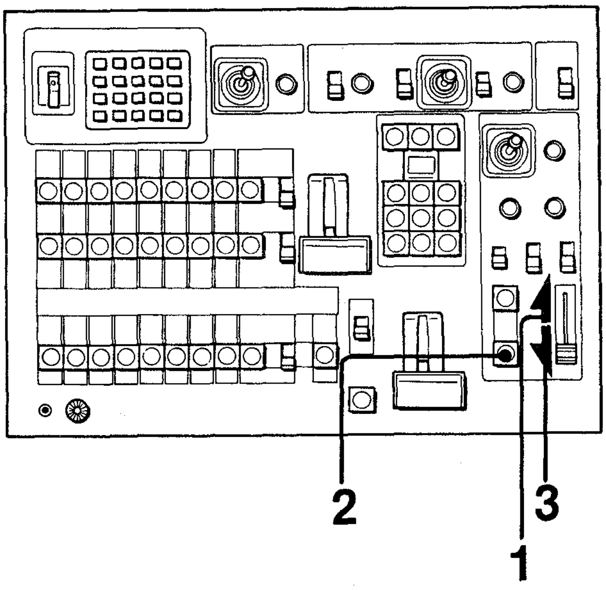


1 Press the PGM CUT IN/OUT button.
The button lights, and the letters are instataneously inserted into the picture. (Cut-in)

2 Move the INSERT lever from the PGM position to the INSERT position.
The picture does not change.

3 Move the INSERT lever from the INSERT position to the PGM position.
The inserted letters are gradually deleted from the picture. At the PGM position, the letters completely disappear and the PGM CUT IN/OUT button goes out. (Fade-out)

Fade-in/Cut-out



1 Move the INSERT lever from the PGM position to the INSERT position.
The letters are gradually inserted into the picture. At the INSERT position, the PGM CUT IN/OUT button lights. (Fade-in)

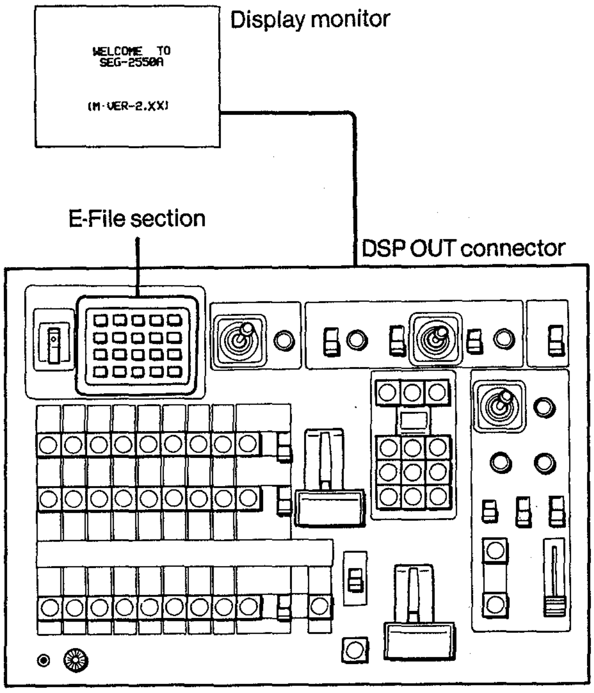
2 Press the PGM CUT IN/OUT button.
The inserted letters are instantaneously deleted from the picture, and the button goes out. (Cut-out)

3 Move the INSERT lever to the PGM position.
The picture does not change.

1-12. WHAT IS "E-File"?

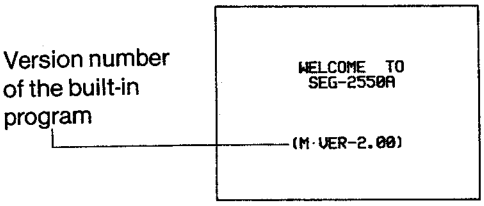
The SEG-2550A/2550AP can memorize the setting of switches and buttons and the movement of the controls, levers and sticks. The settings and movement can easily be reproduced. In this section, how to memorize the effects, and how to recall and execute the memorized effects, etc. are explained.

Each effect, such as cut, wipe, etc. to be executed is called an event. The SEG-2550A/2550AP memorizes the setting of buttons and switches and movement of levers and sticks (this is called transition) event by event.
The memory of events is called "E-File (Event-file)". The E-File is composed of two memories, the event memory and the transition memory. The event memory can memorize up to 63 events, and the transition memory can memorize 4 through 6 minutes of transition period. The transition period is the total period required to execute all memorized lever and stick operations. The limit of the period differs depending upon the levers or sticks to be operated. When either of the event or transition memory is full, the event cannot be memorized.
The events memorized in the E-File can be recalled at any time and be executed by the TAKE button. Instead of the TAKE button, execution can be remotely controlled by a microcomputer or a VTR editing control unit.
The operation of E-File will be done by the keys in the E-File section.



1-13. DISPLAY OF E-File DATA

For the E-File operation, connect a monitor to DSP OUT connector to display the data of the E-File (this is called a display monitor). The data of the E-File can also be displayed on the preset monitor by setting the INDICATION selector to DSP. (On the preset monitor, some mode cannot be displayed. So the use of the display monitor is recommended.)
When the power is turned on, the following is displayed on the display monitor.



```
WELCOME  TO
SEG-2550A

(M·VER-2.00)
```

To display the data of the E-File, press the C key of the E-File section. The data of an E-File is composed of three pages.

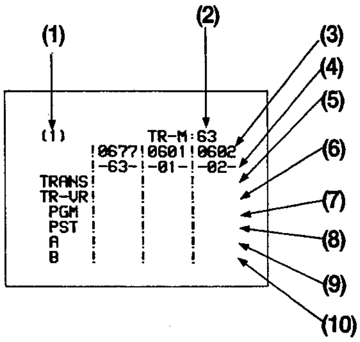
Notes

- After the power is turned on, about 5-second period is necessary to obtain a normal picture.
- The E-File data is displayed approximately 10 seconds after the unit power is turned on.

To change the displayed page
Press the ↓ key. Every time the ↓ key is pressed, the following page is displayed, and at page 3, the display is returned to page 1.

To change the displayed event
Three events are displayed at a time. To display the event which is not displayed, press the ← key or → key.

1-13-1. DATA ON PAGE 1



```
(1)            TR-M:63
        !0677!0601!0602
        !-63-!-01-!-02-
TRANS!
TR-VR!      !     !
 PGM !      !     !
 PST !      !     !
 A   !      !     !
 B   !      !     !
```

Figure 18 Data on page 1

(1) Page number

(2) Remained transition memory

(3) Call number for BVE-900

(4) Event number

(5) Transition time in frame numbers

(6) TR-VR (levers and sticks used in the event)
P/P: PGM/PST MIX lever
EFF: EFF lever
DSK: INSERT lever
POS: POSITION stick
BG-C: BACKGROUND COLOR stick
BG-Y: LUM contorol of BACKGROUND COLOR
CM-C: COLOR MATTE stick
CM-Y: LUM control of COLOR MATTE
B/S: SOFTNESS/BORDER control

(7) PGM (picture selected on the program bus)
(8) PST (picture selected on the preset bus)
EFF: The EFF button of the PST bus select buttons is pressed.
1-8: The button of the PST bus select buttons corresponding to the indicated number is pressed.
WHT: The BACKGROUND selector of the PST bus select section is set to WHT.
COL: The BACKGROUND selector of the PST bus select section is set to COL.
BLK: The BACKGROUND selector of the PST bus select section is set to BLK.

(9) A (picture selected on the A bus)
(10) B (picture selected on the B bus)
1-8: The button of the A bus or B bus select buttons corresponding to the indicated number is pressed.
WHT: The BACKGROUND selector of the A bus or B bus select section is set to WHT.
COL: The BACKGROUND selector of the A bus or B bus select section is set to COL.
BLK: The BACKGROUND selector of the A bus or B bus select section is set to BLK.

1-13-2. DATA ON PAGE 2

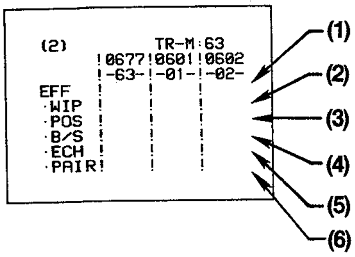


Figure 19 **Data on page 2**

The data of the mixing, wipe and external key is displayed.

(1) EFF (effect to be used)
WIP : The wipe is selected.
MIX : The mixing is selected.
EXT : The external key is selected.

(2) WIP (pattern code of wipe pattern)
000 - 307 : Pattern code of the selected wipe pattern.

(3) POS (setting of the POSITION switch)
ON : The POSITION switch is set to ON.

(4) B/S (setting of the SOFT/HARD/BDR selector)
BDR : The SOFT/HARD/BDR selector is set to BDR.
SOFT : The SOFT/HARD/BDR selector is set to SOFT.

(5) ECH (setting of the PAIRING/ECHO selector)
ON : The PAIRING/ECHO selector is set to ECHO.

(6) PAIR (setting of the PAIRING/ECHO selector)
ON : The PAIRING/ECHO selector is set to PAIRING.

1-13-3. DATA ON PAGE 3

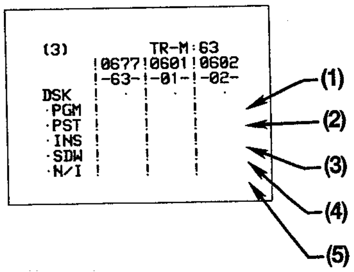


Figure 20 **Data on page 3**

The data of downstream keyer is displayed.

(1) PGM (condition of the program line)
(2) PST (condition of the preset line)
ON : The letters are inserted into the picture of the program or preset bus by downstream keyer.

(3) INS (setting of the INSERT selector)
COL : The INSERT selector is set to COL.
B/W : The INSERT selector is set to B/W.
EXT : The INSERT selector is set to EXT.

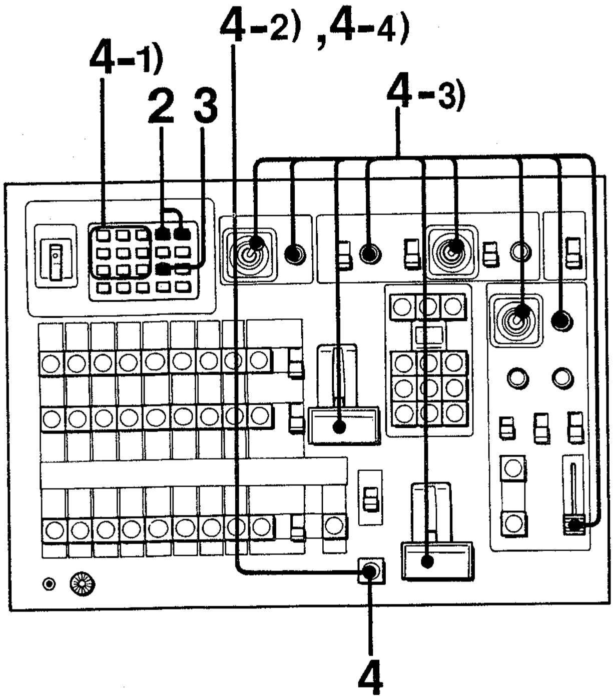
(4) SDW (setting of the SHADOW selector)
WIDE : The SHADOW selector is set to WIDE.
NARW : The SHADOW selector is set to NARW.

(5) N/I (setting of the NORMAL/INVERT selector)
NORM : The NORMAL/INVERT selector is set to NORMAL.
INVT : The NORMAL/INVERT selector is set to INVERT.

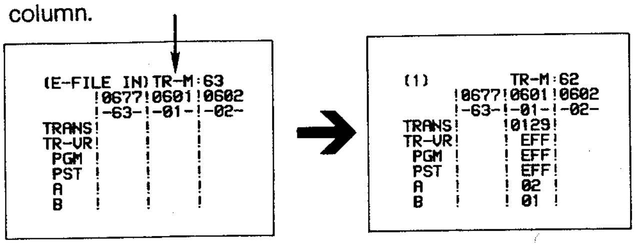
1-14. TO STORE THE DATA IN MEMORY (Min)

To memorize the setting of buttons or switches and the transition of the levers and sticks, proceed as follows.

OPERATION



These figures blink, and the data is entered in this column.



```
(E-FILE IN)TR-M:63
      !0677!0601!0602
      !-63-!-01-!-02-
TRANS!    !    !
TR-VR!    !    !
 PGM !    !    !
 PST !    !    !
  A  !    !    !
  B  !    !    !
```

```
(1)           TR-M:62
      !0677!0601!0602
      !-63-!-01-!-02-
TRANS!    !0129!
TR-VR!    ! EFF!
 PGM !    ! EFF!
 PST !    ! EFF!
  A  !    ! 02 !
  B  !    ! 01 !
```

Figure 21 **Data entry**

1 Set the switches and buttons on the SEG-2550A/2550AP to the condition to be memorized.

2 Place the event number in which the data is to be memorized at the center by pressing the ← key or the → key.

3 Press the Min key.
The event number at the center on the screen starts blinking, and the TAKE button also starts blinking.

4 Execute the effect to be memorized as follows:

Cut

Press the TAKE button, and all of the data set on the panel is automatically memorized at a time.

Transition

1) Designate the lever or stick to be used by the corresponding number, 0 through 9. The numbers of sticks or levers are printed on the control panel.
   To use the PGM/PST MIX lever : 0
   To use the EFF lever : 1
   To use the INSERT lever : 3
   To use the POSITION stick : 4
   To use the BACKGROUND COLOR stick : 5
   To use the LUM control of BACKGROUND COLOR : 6
   To use the COLOR MATTE stick : 7
   To use the LUM control of COLOR MATTE : 8
   To use the SOFTNESS/BORDER control : 9
2) Press the TAKE button.
   Memorizing the movement of the designated lever or stick starts
3) Move the stick or lever designated in step 1).
4) Press the TAKE button again at the end of operation.
   Memorizing the data is terminated. The period from step 2) through 4) is also memorized in frame numbers and displayed in "TRANS".

The data of an event is memorized. Repeat steps 1 through 4 to memorize the data more.

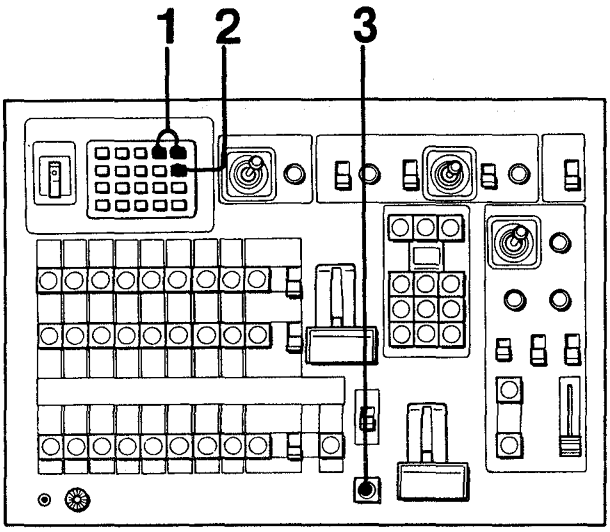
Notes on data entry

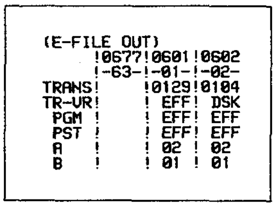
- The event number can be automatically increased by one. Refer to "MODE SETTING".
- In the file in which the data has been memorized, the data cannot be entered. To enter new data, erase the memorized data, and enter the new data. For details on erasing data, refer to "TO ERASE DATA".
- When the transition memory is full, the indication of TR-M will be FULL, and new data cannot be entered. To enter the data, erase the data memorized in E-file.
- Even if the TR-M indication is FULL, certain special effects unrelated to the transition memory (such as CUT) can be memorized, if the event memory is not full.
- The transition memory and the event memory are separate. Transitions are memorized in the order in which they are executed regardless of the event number sequence. If an event number (except for the last in a transition memory map) is cancelled, its space will not be saved. No other event number may be substituted in the cancelled event number's space.

1-15. TO RECALL AND EXECUTE THE MEMORIZED DATA (MR)

The data memorized in the E-File can be recalled and be executed.

1-15-1. OPERATION





```
(E-FILE OUT)
      !0677!0601 !0602
      !-63-!-01-!-02-
TRANS!     !0129!0104
TR-VR!     ! EFF! DSK
 PGM !     ! EFF! EFF
 PST !     ! EFF! EFF
 A   !     ! 02 ! 02
 B   !     ! 01 ! 01
```

Figure 22 **Recalled data**

1 Place the event number to be used at the center of the screen by pressing the ← key or the → key.

2 Press the MR key.

3 Press the TAKE button.
The event to be recalled will be executed.
Every time the TAKE button is pressed, the event is executed.

- When the MR key is pressed after selecting the event in which no data is memorized, nothing occurs.
- The event can be executed repeatedly, or two or more events can be executed automatically. Refer to "MODE SETTING".

1-15-2. TO EXECUTE ANOTHER EVENT

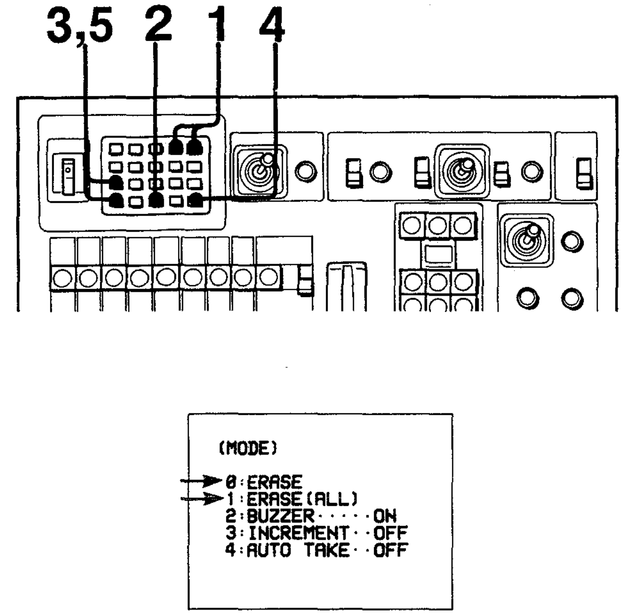
Press the C key one time, and recall and execute another event by following steps 1 through 3 mentioned above.

1-15-3. TO TERMINATE THE EXECUTION MODE

Press the C key twice, and the unit can be operated manually. If the key is not pressed twice, the SEG-2550A/2550AP keeps the mode to recall and execute the event.

1-16. TO ERASE DATA (ERASE)

When the capacity of memory becomes full, or you want to enter the data in the event in which the data has already been memorized, the memorized data should be erased.



```
(MODE)
→0:ERASE
→1:ERASE(ALL)
 2:BUZZER·····ON
 3:INCREMENT··OFF
 4:AUTO TAKE··OFF
```

Figure 23 **To erase data**

1 Place the event number whose data is to be erased at the center by pressing the ← key or the → key.
To erase the data in all events simultaneously, this step is not necessary.

2 Press the MOD key.
The menu of the mode is displayed.

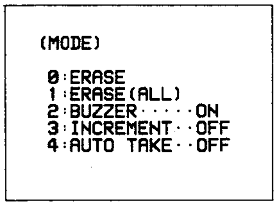
3 **To erase an event**
Press the 0 key.
To erase all events
Press the 1 key.

4 Press the SET key.

5 Press the key pressed in step 3 again.
The data in the designated event(s) are erased.

1-17. MODE SETTING (MOD)

Turning the buzzer on or off, auto increment of an event number, repeated execution of an event can be set. Press the MOD key to display the mode menu.



```
(MODE)

0:ERASE
1:ERASE(ALL)
2:BUZZER·····ON
3:INCREMENT··OFF
4:AUTO TAKE··OFF
```

Figure 24 **Mode menu**

1-17-1. TO TURN ON AND OFF THE BUZZER

Every time the event is executed, the buzzer sounds. The buzzer can be cut off by setting "2:BUZZER".

ON : The buzzer sounds.

OFF : The buzzer does not sound.

1 Press the 2 key.
The figure "2" on the screen starts blinking.

2 Press the 2 key again.
ON/OFF setting is changed.

1-17-2. TO INCREASE THE EVENT NUMBER AUTOMATICALLY

To memorize or recall the data of the event, the event number can be automatically increased by one by setting "3:INCREMENT".

ON : The event number is automatically increased by one.

OFF : The event number does not change automatically.

1 Press the 3 key.
The figure "3" on the screen starts blinking.

2 Press the 3 key again.
ON/OFF setting is changed.

1-17-3. TO EXECUTE AN EVENT REPEATEDLY

The event recalled can be executed repeatedly by setting "4:AUTO TAKE".

ON : When the TAKE button is pressed, the designated event is executed repeatedly until the C key is pressed to stop the execution.

OFF : When the TAKE button is pressed, the designated event is executed once and stops.

1 Press the 4 key.
The figure "4" on the screen starts blinking.

2 Press the 4 key again.
ON/OFF setting is changed.

TO EXECUTE ALL EVENTS REPEATEDLY

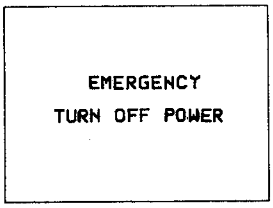
When both "3:INCREMENT" and "4:AUTO TAKE" are set to ON, the execution of events starts from the designated one by pressing the TAKE button, and all events are repeatedly executed until the C key is pressed to stop execution.

1-18. MEMORY BACKUP

The data memorized in the E-File can be held for about 24 hours by the built-in power source condensor even if the power is turned off. To charge the back-up condenser, power supply for about two hours is required. When you use the SEG-2550A/2550AP for the first time, supply power for two hours or more continuously.

1-19. IN CASE OF EMERGENCY

If some fault occurs in the power supply section, the temperature in the unit becomes too high. In such a case, a buzzer sounds continuously to alert to the fault, and the emergency notice is displayed on the display monitor.
Turn the power off immediately, and contact your authorized Sony dealer. If this condition remains, the power is automatically turned off after a while.



EMERGENCY
TURN OFF POWER

Figure 25 **Emergency notice**

The SEG-2550A/2550AP can be controlled by a VTR editing control unit or by a microcomputer through the RS-232C port. To control the SEG-2550A/2550AP with external equipment, press the REM key of the E-File section on the control panel. The unit then enters the remote control mode, and the controlled condition is displayed on the display monitor. The present condition is indicated by "*" before one of the displayed messages:

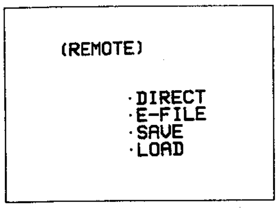
DIRECT : The SEG-2550A/2550AP is controlled by a VTR editing control unit or a microcomputer. In this mode, the operation can be controlled simultaneously with the control panel of the SEG-2550A/2550AP.

E-File : The operation of "MR" using the E-File of the SEG-2550A/2550AP is remotely controlled.

SAVE : The data of the E-File is being saved on the floppy disc of the external equipment.*

LOAD : The data of the E-File saved on the floppy disc of the external euquipment is being loaded into the E-File memory of the SEG-2550A/2550AP.*

* To save and load the data of the E-File, the software to save and load the data must be provided on the external equipment.



```
(REMOTE)

        ·DIRECT
        ·E-FILE
        ·SAVE
        ·LOAD
```

Figure 26 Display of remote mode

1-20 CONTROL WITH A BVE-900 EDITING CONTROL UNIT

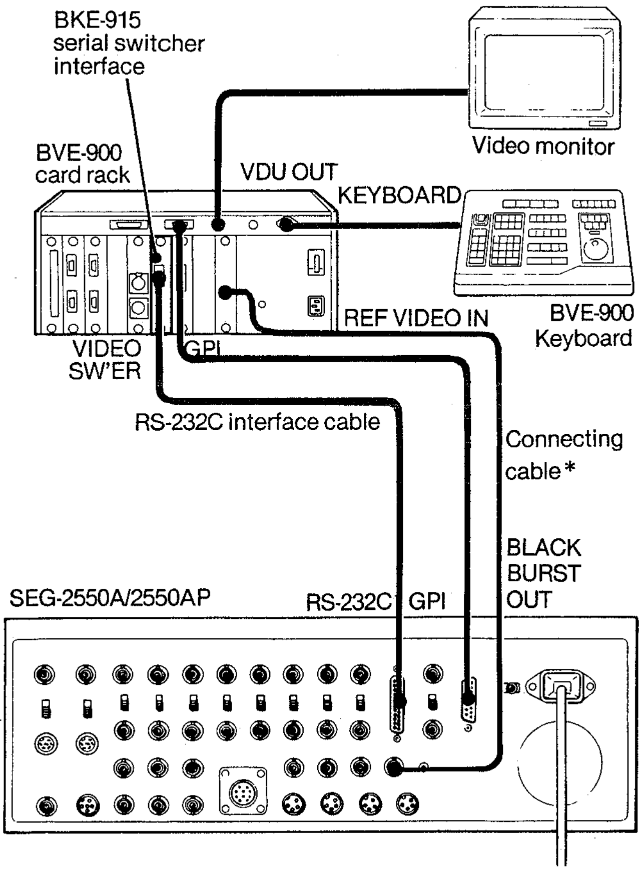
When an BVE-900 editing control unit is used with the SEG-2550A/2550AP, the SEG-2550A/2550AP can be remotely controlled in synchronization with the edit point of the video signal. With the BVE-900, the following items can be controlled:

- Designate two program sources to be used for an effect
- Select the effect to be used
- Select the wipe pattern
- Designate the transition time
- Control of the E-File

- When the BVE-900 is used, a BKE-915 serial switcher interface should be inserted into the BVE-900.

1-20-1. CONNECTIONS

Connect the BVE-900 and the SEG-2550A/2550AP as shown below.
For the other equipment to be used, please refer to "BASIC CONNECTIONS" and "TO CONNECT AN SMC-70G/70GP FOR DOWNSTREAM KEYER".



* Make the connecting cable for GPI connectors using the connectors supplied with the BVE-900 and SEG-2550A/2550AP. Be sure to connect 1 pin of the BVE-900 to 1 pin of the SEG-2550A/2550AP, and 2 pin to 2 pin.

1-20-2. PREPARATIONS

On the SEG-2550A/2550AP
Turn the power of the SEG-2550A/2550AP on, and press the REM key of the E-File section. The display for the remote mode will appear on the display monitor.

On the BVE-900
Set the BVE-900 in the SYSTEM SETUP mode, and designate which equipment connected to the VIDEO IN 1 through 8 connectors on the SEG-2550A/2550AP corresponds to the R-VTR (recorder), P1 through P3 (player 1 through 3) and AUX1, AUX2 (auxiliary 1, 2) in the GROUP-4 SW'ER BLOCK mode.
AUX 1 and AUX 2 can be designated for the camera input, the color bars or the background* of the SEG-2550A/2550AP.

* The color of the background is designated by the BACKGROUND selector on the SEG-2550A/2550AP.

Example:
Setting of the BVE-900 when AUX 1 is designated for the color bars and AUX 2 is designated for the background:

	Input channel	Reel number*
AUX 1 (BYTE-5)	08 (channel 8)	0999
AUX 2 (BYTE-6)	09 (channel 9)	BLK

* The initial setting of the reel number is 0999 for AUX 1 and BLK for AUX 2.

1-20-3. OPERATION

To select program sources
Select the signal sources connected to the SEG-2550A/2550AP with the source selection keys on the keyboard of the BVE-900.
When a key is pressed, the signal designaged in the "PREPARATIONS" will be selected.

To designate the effect to be used
Designate the effect to be used to change the pictures with the effect type keys on the keyboard of the BVE-900. The BVE-900 can designate six types of effect: CUT, DISS (dissolve), WIPE, KEY, PTN KEY (pattern key) and MAN (manual). The SEG-2550A/2550AP, however, cannot execute the PTN KEY.

CUT: Same as cut on the SEG-2550A/2550AP

DISS: Same as mixing on the SEG-2550A/2550AP

WIPE: Wipe pattern can be selected from 137 patterns by designating three digits from 000 through 307.

- When an incorrect pattern code is designated, the SEG-2550A/2550AP execute the effect designated for the preceding event.

KEY: The signal connected to the EXT KEY connector on the SEG-2550A/2550AP is used as a key signal. Of the key operations available on the BVE-900, only CUT IN, CUT OUT and KEY-DELAY can be executed on the SEG-2550A/2550AP.

MAN: The BVE-900 designates the VTRs to be used, and executes the synchronization of the VTRs. Other operations are done on the SEG-2550A/2550AP.

To designate the transition time

When wipe or dissolve is executed by the BVE-900, the transition time must be designated instead of moving the EFF lever on the SEG-2550A/2550AP. The wipe and dissolve will be executed in the designated period. The BVE-900 can designate a period from 00 second 00 frame through 59 seconds 29 frames in NTSC, or 00 second 00 frame through 59 seconds 24 frames in PAL, but on the SEG-2550A/2550AP, only the following periods can be executed.

NTSC : 0 through 7, 9, 13, 39 through 1023 frames (34 seconds 3 frames)

PAL : 0 through 6, 8, 10, 16, 32 through 1023 (40 seconds 23 frames)

If a period other those that mentioned above is selected, the period longer than and nearest to the designated one is used. For example, if the designated period is 8 frames in NTSC, the effect will be executed in 9 frames.

Notes

- When the wipe patterns of pattern code 300 to 307 (mosaic wipe) are selected, it is not possible to wipe at a speed of 8 frames or faster.
- When the transition time is designated by the BVE-900 and the effect is executed by the SEG-2550A/2550AP, the actual period may be shorter than the designated one.
- When the transition time is designated as 1 frame, the SEG-2550A/2550AP may not execute the designated effect correctly, instead it may change the picture by cut.

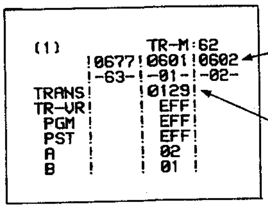
1-20-4. OPERATION OF E-FILE

The operation to store the data in the E-File memory can be controlled by the BVE-900. The BVE-900 can also recall the E-File data from the SEG-2550A/2550AP and use it in the EDL (Edit Decision List) to execute the editing automatically.

To memorize the data in the E-File

1. Set the GPI-1 to EFFECT in "INIT mode MENU 1" on the BVE-900.
2. Set the effect to MAN (manual) on the BVE-900.
3. Select the program sources for the A-bus and B-bus on the BVE-900, and locate the IN points of the R-VTR and program sources.
4. Press the C key on the SEG-2550A/2550AP twice.
5. Perform steps 1 through 4-1) in "TO STORE THE DATA IN MEMORY (Min)" section to set the switches and buttons to the condition to be memorized.
6. Press the PREVIEW button on the BVE-900.
   The tapes of the R-VTR and program sources start running.
7. When the tapes reach to the IN points, the buzzer sounds on the SEG-2550A/2550AP. Start moving the stick or lever.
8. When the operation of the stick or lever ends, press the TAKE button on the SEG-2550A/2550AP.
   The setting of switches and buttons and the operating procedure of the stick or lever are memorized.
9. Press the ALL STOP key on the BVE-900.
   The tapes stop running.

To recall and execute the memorized data
To recall and execute the data memorized in the E-File of the SEG-2550A/2550AP on the BVE-900, designate the wipe as the effect, and the call number for the BVE-900 (06XX), which is displayed above the event number of the E-File data, as the pattern code (PTRN). Then the edit using the E-File data of the SEG-2550A/2550AP will be executed.
E-file data

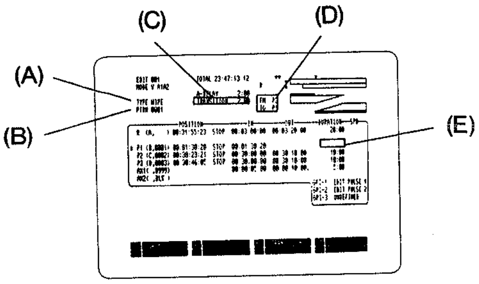


```
(1)            TR-M:62
       !0677!0601!0602
       !-63-!-01-!-02-
TRANS!      !0129!
TR-VR!      ! EFF!
 PGM !      ! EFF!
 PST !      ! EFF!
 A   !      ! 02 !
 B   !      ! 01 !
```

Designate this number as the data for PTRN.

Designate this value as the data for TRANSITION.

Setting of the BVE-900



(A) Designate WIPE.
(B) Designate the call number of the E-File to be used like "06XX".
(C) Designate the value of the TRANS of the E-File data in frame numbers.
(D) Do not change the setting.
(E) Designate the value larger than the data of TRANSITION as the duration of "TO" source.

After setting the above items, set the SEG-2550A/2550AP in remote mode, and press the PREVIEW key on the BVE-900. The rehearsal using the designated E-File will be executed. To execute the editing, press the REC key on the BVE-900.

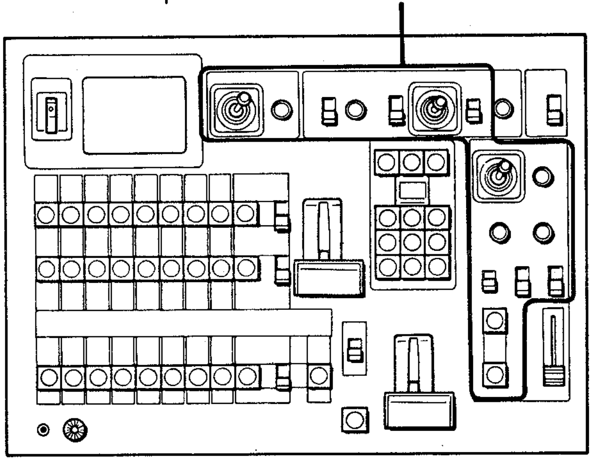
Automatic editing using the EDL
When the above procedure is performed, the E-File data is kept in the EDL of the BVE-900. When the editing using the EDL is executed on the BVE-900, the SEG-2550A/2550AP is also controlled together with the BVE-900 by the EDL, and the editing using the E-File data will be executed.

1-20-5. OPERATION LINKING WITH THE E-FILE

The E-File data recalled and executed by the BVE-900 will be effective until the next E-File data is recalled. Using this function, the data which cannot be controlled by the BVE-900 such as border, softness, pairing, echo and position of wipe, color of background, etc., can be used with the following procedures.

- When this function is to be used, be sure to set the AUTO TAKE of the mode setting of the SEG-2550A/2550AP to OFF.

Operation whose E-File data can be used



1 Recall and execute the event whose data is to be used.

2 Press the C key of the SEG-2500A/2550AP one time.
The TAKE button starts blinking.

3 Press the EDT key of the SEG-2550A/2550AP.
The SEG-2550A/2550AP is set in remote mode.

4 Execute the designated effect on the BVE-900.

To use the data of another event, press the C key one time, and repeat steps 1 through 4.

To finish the operation linking with the E-File, press the C key two times. The blinking of the TAKE button stops.

Linking operation in the EDL

When the edit using the E-File data is included in the EDL, the following operation will be possible.

- The E-File data is effective in the edits followed to the edit using the E-File.

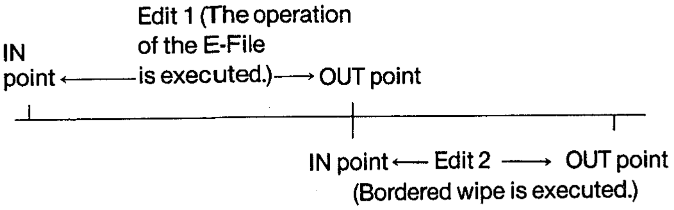
  For example, when the wipe with border is executed using the E-File data, the wipe will be bordered in the next edit in which wipe is designated by the BVE-900.

  Data

  Edit 1: Bordered wipe using the E-File data

  Edit 2: Wipe designated by the BVE-900

  Execution


Edit 1 (The operation of the E-File is executed.)
IN point
OUT point
IN point
Edit 2
OUT point
(Bordered wipe is executed.)

- When the operation which cannot be controlled by the BVE-900 is stored in the E-File, the combined operation of the E-File and the BVE-900 will be possible.

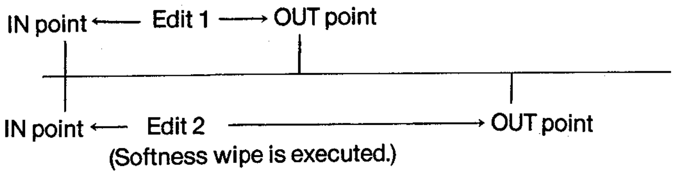
  Data

  Event 1 (0601): Softness wipe

  Edit 1: Designate 0601 (event 1) as the data for PTRN of wipe

  Edit 2: Designate wipe on the BVE-900. Designate the same IN point as that of Edit 1.

  Execution



To release the linking operation

Designate 0600 as the data for the PTRN of wipe on the BVE-900, and 1 frame or more as the data for TRANSITION and DURATION. Then the E-File data will be ineffective in the following edits.

On the SEG-2550A/2550AP, the control panel will be activated.

- The IN point of the edit followed to the edit whose PTRN data is 0600, should be set to the same point as that of the edit with the PTRN data of 0600.

1-20-6. OPERATION OF THE SEG-2550A/2550AP CONTROLLED BY THE BVE-900

Even when the SEG-2550A/2550AP is controlled by the BVE-900, the control panel of the unit is active unless the TAKE button is blinking. After designating an item with the BVE-900, designate another item with the SEG-2550A/2550AP, and the item designated by the SEG-2550A/2550AP will be effective. However, the EFF lever is not operative when executing an effect designated by the BVE-900. To use the EFF lever, move the lever to the A bus side after executing the designated effect. Then the EFF lever can be used.

Using this function, the following operation will be possible.

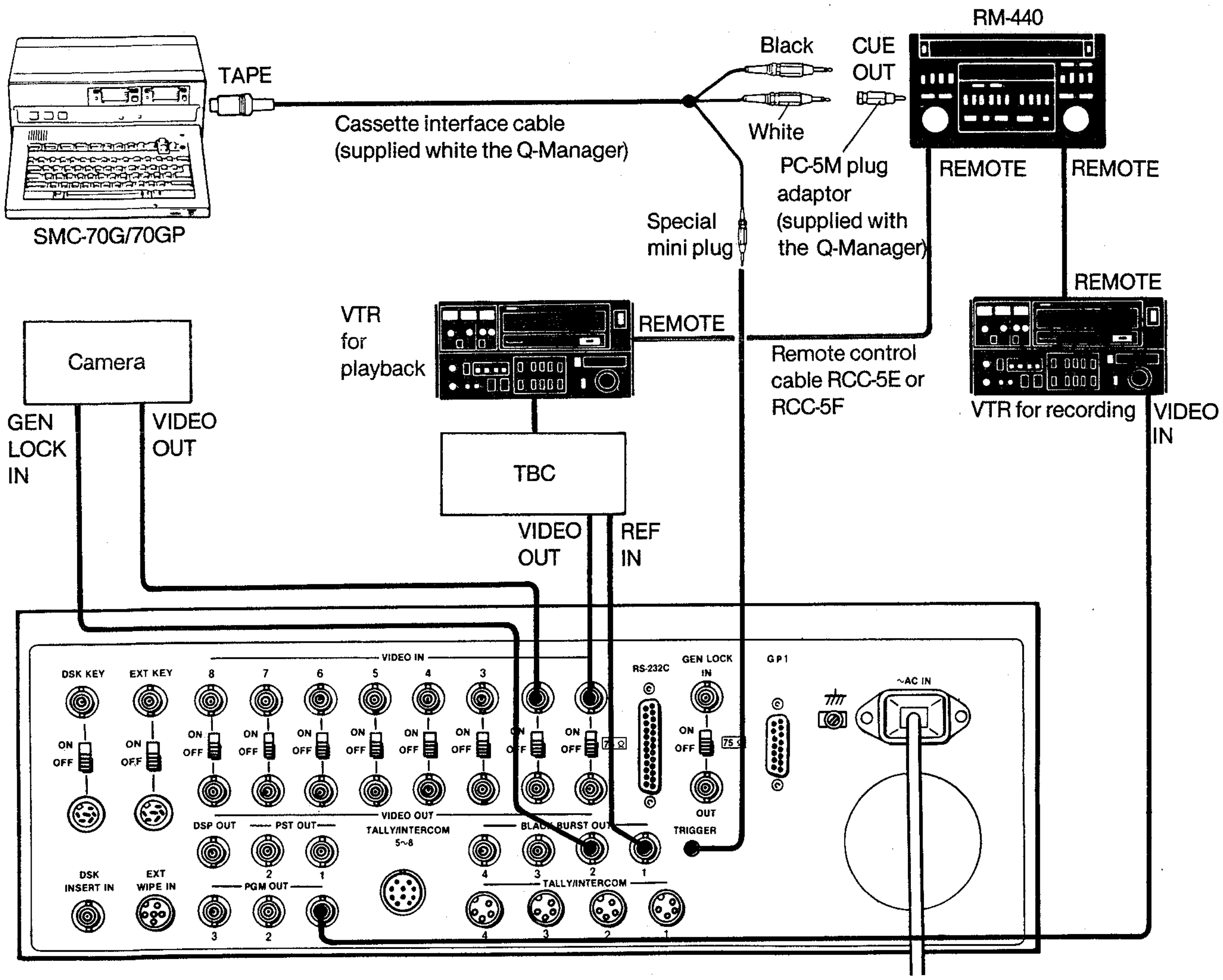
- While the effect designated by the BVE-900 is being executed, the letters can be inserted and deleted with the PGM CUT IN/OUT buttons or INSERT lever of the DOWNSTREAM KEYER section on the SEG-2550A/2550AP.
- With the data of two program sources selected by the BVE-900 retained, another program source can be designated with the SEG-2550A/2550AP.

  For example, when the setting by the BVE-900 is to change from program 1 to program 2, a change from program 1 through program 7 will be possible without changing the setting mode by the BVE-900. Keep pressing the 7 button of the B-bus select buttons until the IN point is passed, and program 1 will change to program 7, but the original setting, the change from program 1 to program 2, is retained.

1-21. CONTROL WITH A MICROCOMPUTER

When the SEG-2550A/2550AP is used with a microcomputer, the events memorized in E-File can be executed besides the function of downstream keyer. To control the E-File function, Q-Manager, the software of the SMC-70G/70GP, is necessary.

Connection example



RM-440
Black
CUE OUT
TAPE
White
Cassette interface cable
(supplied white the Q-Manager)
PC-5M plug adaptor (supplied with the Q-Manager)
REMOTE
REMOTE
SMC-70G/70GP
Special mini plug
REMOTE
VTR for playback
REMOTE
Camera
Remote control cable RCC-5E or RCC-5F
VTR for recording
VIDEO IN
GEN LOCK IN
VIDEO OUT
TBC
VIDEO OUT
REF IN
DSK KEY
EXT KEY
VIDEO IN
8
7
6
5
4
3
ON
OFF
75 Ω
RS-232C
GEN LOCK IN
OUT
G P 1
~AC IN
VIDEO OUT
DSP OUT
PST OUT
2
1
TALLY/INTERCOM 5~8
BLACK BURST OUT
4
3
2
1
TRIGGER
DSK INSERT IN
EXT WIPE IN
PGM OUT
3
2
TALLY/INTERCOM
4
3
2
1

1-22. CONTROL USING THE GPI CONNECTOR

The function of the TAKE button and the cut in and cut out function of the downstream keyer can be controlled by the equipment connected to the GPI connector.

- The execution can be initiated only by sending the trigger signal.

When the BVE-900 is used

For example, if the time to execute the effect is designated on the BVE-900, it is possible to automatically execute the effect or to insert or delete the characters with the downstream keyer.

- When the effect is executed by the equipment connected to the GPI connector, the execution is delayed by one frame.

1-23. ADJUSTING SWITCHES AND VOLUMES INSIDE THE UNIT

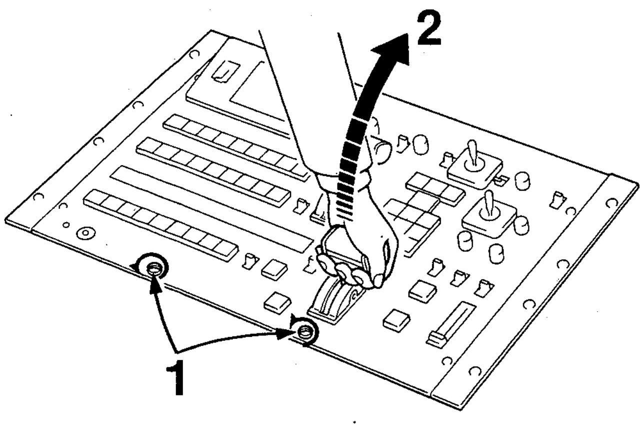
The switches and volumes inside the unit adjust the items which do not require the usual adjustments. The items to be adjusted are as follows :

- SC and H phases
- Burst and sync signal level of program and preset signals
- White and black level of background
- Mask of downstream keyer and external key
- Height/width ratio of wipe pattern
- The number of lines for pairing wipe
- Circularity and horizontal and vertical ratio of the round wipe
- Selection whether the corners of wipe pattern is rounded or not
- Video and setup level of program and preset output signals
- Intercom level of intercom 5 - 8
- Sidetone level of intercom 1 - 8
- Balance of the setup level between A bus and B bus signals
- Selection whether the burst and sync signal is replaced or not

- Adjust each volume by turning it with a small screwdriver.

1-23-1. HOW TO OPEN AND CLOSE THE CONTROL PANEL

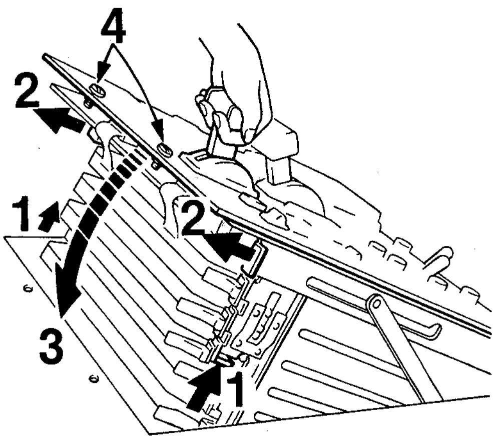
How to open the panel



1 Loosen two screws.

2 Pull up the panel by holding the lever until it locks.

How to close the panel



1 Check that the board stoppers on both sides are locked (they should be placed at the upper position).

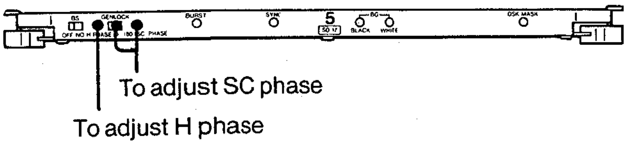
2 While holding the panel, pull the release levers on both sides to release the lock.
Be sure to hold the panel firmly, or your fingers may be catched between the side panel and the control panel.

3 Close the panel by holding the lever.

4 Fasten two screws.

1-23-2. ADJUSTING THE SC AND H PHASES

When the SEG-2550A/2550AP operates synchronizing with an external sync signal, the phases of sync signal and subcarrier of the signals supplied from the PGM OUT connector on the SEG-2550A/2550AP should be adjusted to the phases of the external sync signal by the volumes on the 5 SD-17 board. Adjust the phase by monitoring the indication on the preset monitor.



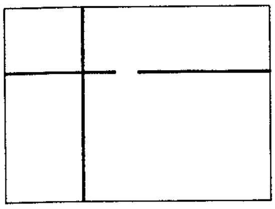
1 Connect the external sync signal to the GEN LOCK IN connector and to one of the VIDEO IN 1 through 8 connectors.

2 Set the PGM/PST selector to PGM.

3 Press the PST select button corresponding to the connector to which the external sync signal is connected.

4 Set the INDICATION selector on the control panel to PHASE.
The indication for adjusting phases appear on the preset monitor.

To adjust H phase



To adjust SC phase

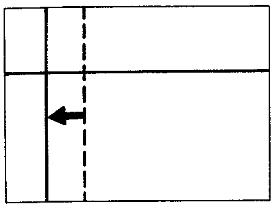


Figure 27 **Phase indication**

5 Adjust the H phase by turning the H.PHASE volume so that the left and right horizontal lines appear together.

6 Adjust the subcarrier phase by the SC 0°/180° selector and SC.PHASE volume.
Set the switch to the appropriate position, then turn the volume so that the right line moves to the left to become one line with the left line.
(For details, refer to "ADJUSTMENTS OF CONNECTED EQUIPMENT.")

- When the adjustment completes, set the INDICATION selector to OFF.

1-23-3. ADJUSTING THE SC-H PHASE RELATION

To adjust the SC-H phase relation with high precision (adjustment of color framing), proceed as follows using the equipment which can set the SC-H phase relation.

When the SEG-2550A/2550AP operates with an external sync signal

1 Adjust the H phase and SC phase with the procedure mentioned above.

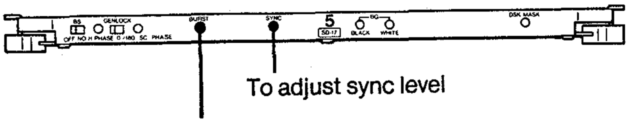
2 While observing the SC-H phase measuring equipment, turn the H. PHASE volume to adjust the SC-H phase relations precisely.

If more precise adjustment of the SC-H phase relation is required, set a switch on the SD-17 board so that the black burst signal generated by an external sync signal generator which is connected to the VIDEO IN connector, is supplied from the PGM OUT and PST OUT connectors.

When the SEG-2550A/2550AP is used with no external sync signal supplied
The SC-H phase relation of the built-in sync signal generator can also be adjusted. In this case, adjust it with the SC PHASE volume instead of the H. PHASE volume in the above procedure. In the internal sync mode, the phase may be shifted with the temperature inside the unit raised.

1-23-4. ADJUSTING BURST AND SYNC SIGNAL LEVELS

With the BURST and SYNC volumes on the 5 SD-17 board, the burst and sync signal level of program and preset output signal can be adjusted.
To adjust the level, be sure to monitor the program output signal on a waveform monitor.

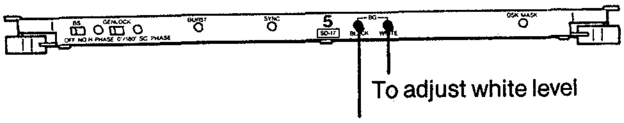

BS
GENLOCK
OFF ON H PHASE 0°/180° SC PHASE
BURST
SYNC
5
SD-17
BG
BLACK
WHITE
DSK MASK

To adjust sync level

To adjust burst level

1-23-5. ADJUSTING WHITE AND BLACK LEVELS OF BACKGROUND

When the WHT (white) or BLK (black) is selected as background, the white and black level can be adjusted by the BG volumes on the 5 SD-17 board.

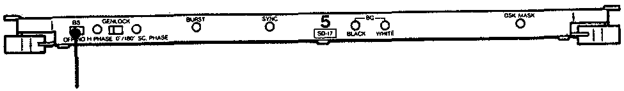

BS
GENLOCK
OFF ON H PHASE 0°/180° SC PHASE
BURST
SYNC
5
SD-17
BG
BLACK
WHITE
DSK MASK

To adjust white level

To adjust black level

1-23-6. REPLACING THE BURST AND SYNC SIGNALS

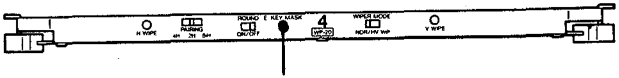
The burst and sync signals of the input signal are normally replaced with the signals generated by the sync signal generator built in the SEG-2550A/2550AP. When the BS switch on the SD-17 board is set to OFF, the signals are not replaced, and the input signals are output as they are.


BS
GENLOCK
OFF ON H PHASE 0°/180° SC PHASE
BURST
SYNC
5
SD-17
BG
BLACK
WHITE
DSK MASK

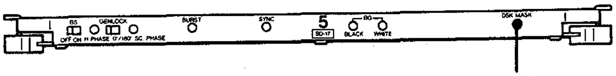
BS switch

1-23-7. MASK OF DOWNSTREAM KEYER AND EXTERNAL KEY

When the black letter on the white paper is used as a key signal source for the downstream keyer or external key, the edge of the horizontal and vertical blanking pulses may appear on the screen on some black and white cameras. In such a case, turn the volume to change the masking value so that the pulse disappears from the screen.
Adjust the mask of downstream keyer by the DSK MASK volume on the 5 SD-17 board, and adjust the mask of external key by the E.KEY MASK volume on the 4 WF-20 board.
In normal operation, this adjustment is not required.


H WIPE
PAIRING
4H 2H 8H
ROUND
E KEY MASK
ON/OFF
4
WF-20
WIPER MODE
NOR/HV WP
V WIPE

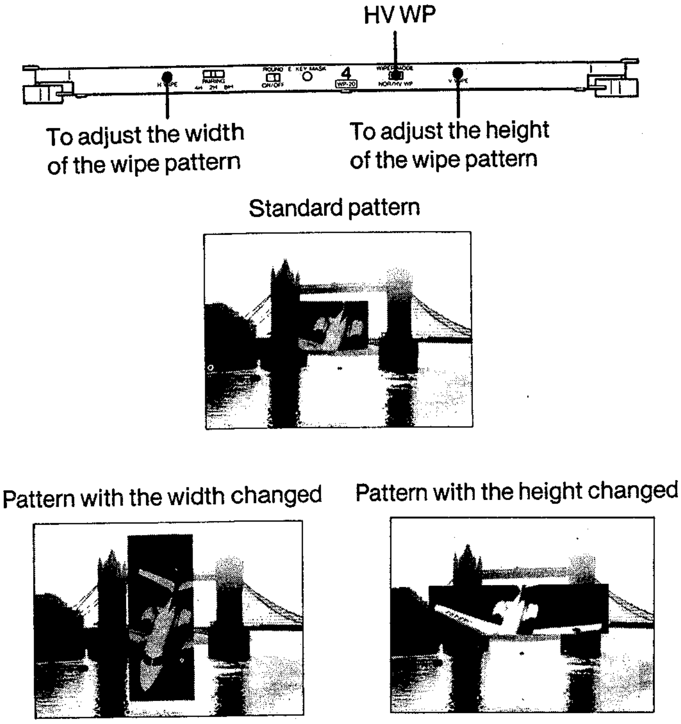
To adjust the mask of external key


BS
GENLOCK
OFF ON H PHASE 0°/180° SC PHASE
BURST
SYNC
5
SD-17
BG
BLACK
WHITE
DSK MASK

To adjust the mask of downstream keyer

1-23-8. ADJUSTING THE HEIGHT/WIDTH RATIO OF THE WIPE PATTERN

The ratio of the height to the width of the wipe pattern can be adjusted with the H WIPE volume and the V WIPE volume on the 4 WF-20 board. Only the ratio of the pattern with the pattern code whose left most digit is 0 (for example 001) can be adjusted.



HV WP

To adjust the width of the wipe pattern

To adjust the height of the wipe pattern

Standard pattern

Pattern with the width changed

Pattern with the height changed

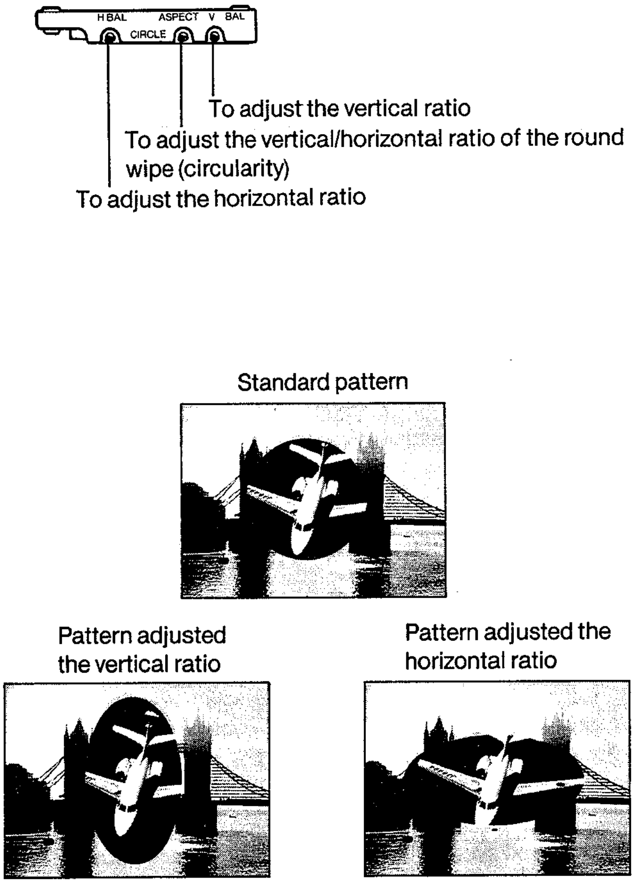
Figure 28 **Adjusting the height/width ratio of wipe patterns**

1. Set the WIPER MODE selector to HV WP.
2. Turn the H WIPE volume to adjust the width of the pattern, or turn the V WIPE volume to adjust the height of the pattern.

- When the WIPER MODE switch is returned to NOR, the standard ratio can be obtained.
- When the height/width ratio of the wipe pattern is extremely changed from the standard, the screen may not be wiped completely.

1-23-9. ADJUSTING THE ROUND WIPE

The circularity and the vertical and horizontal ratio of the round wipe (pattern code 103) can be adjusted. Turn the H BAL, ASPECT, V BAL volumes on the WP-21 board.



To adjust the vertical ratio

To adjust the vertical/horizontal ratio of the round wipe (circularity)

To adjust the horizontal ratio

Standard pattern

Pattern adjusted the vertical ratio

Pattern adjusted the horizontal ratio

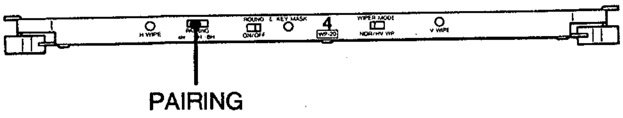
Figure 29 **Adjusting the vertical and horizontal ration of the round wipe**

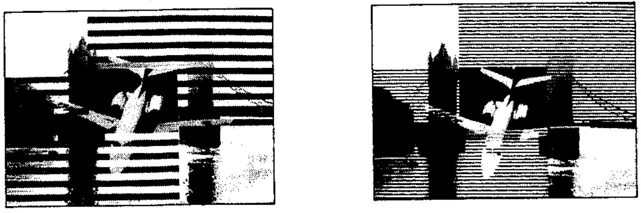
- For pairing and echo wipes, the adjustment of the round wipe is not possible.

1-23-10. SELECTION OF THE NUMBER OF LINES FOR PAIRING WIPE

The line width of pairing wipe can be selected by designating the number of lines with the PAIRING switch on the 4 WF-20 board as follows :

4H : for 4 scanning lines
2H : for 2 scanning lines
8H : for 8 scanning lines




8 scanning lines

2 scanning lines

4 scanning lines

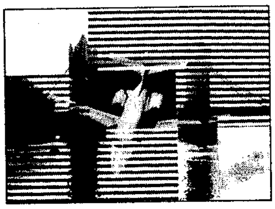
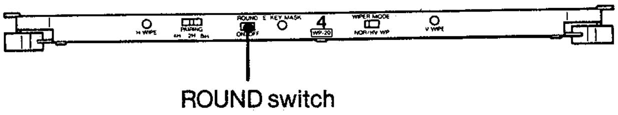
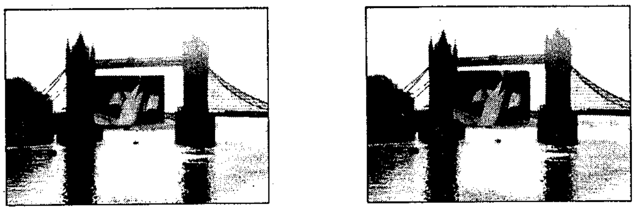


Figure 30 Line width for pairing wipe

1-23-11. ROUNDING THE CORNERS OF THE WIPE-PATTERNS

The corners of the wipe pattern are rounded.
Set the ROUND switch on the 4 WF-20 board to ON.




Standard wipe

Rounded wipe

Figure 31 Round wipe

- The rounded wipe is valid with some patterns.

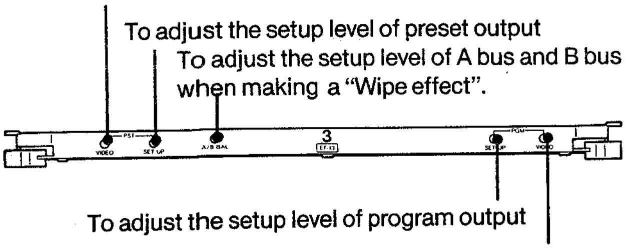
1-23-12. ADJUSTING
—THE VIDEO AND SETUP LEVEL OF OUTPUT SIGNALS
—THE SETUP LEVEL OF THE A BUS AND THE B BUS

- The video and setup level of signals output from the PST OUT and PGM OUT connectors can be adjusted. While monitoring the waveform on the waveform monitor, adjust the level by the PST VIDEO, PST SETUP, PGM VIDEO and PGM SETUP volumes on the 3 EF-13 board.
- The setup level of the A bus and the B bus, when making a "Wipe effect", can be adjusted and equalized with the A/B BAL volume on the same board. While monitoring their waveforms, turn the control so that the waveforms coincide.

To adjust the video level of preset output

To adjust the setup level of preset output

To adjust the setup level of A bus and B bus when making a "Wipe effect".



To adjust the setup level of program output

To adjust the video level of program output

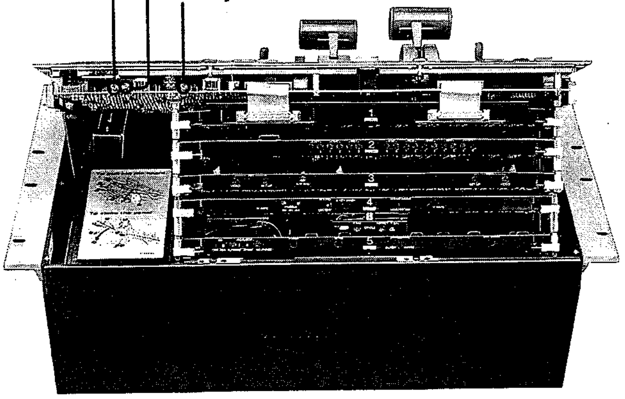
1-23-13. ADJUSTING THE INTERCOM AND SIDE TONE LEVELS

The intercom level of intercom 5 through 8 and the side tone level of intercom 1 through 8 can be adjusted with the volumes placed below the control panel.

To adjust the side tone of intercom 5 through 8

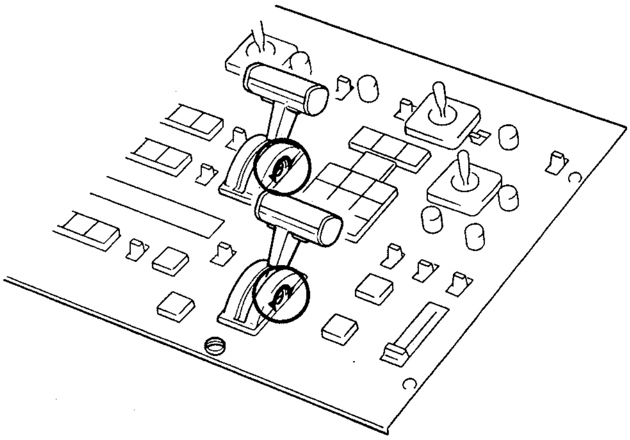
To adjust the intercom level of intercom 5 through 8

To adjust the side tone of intercom 1 through 4



1-24. ADJUSTING THE TORQUE OF LEVERS

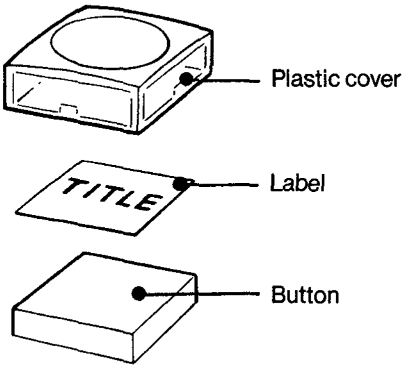
The torque of the PGM/PST MIX and EFF levers can be adjusted. Adjust the TORQUE screw on the right side at the base of the lever with a screwdriver.



1-25. USING THE SUPPLIED LABEL AND SEAL

1-25-1. HOW TO USE THE LABEL

On the buttons to select a picture, labels indicating the video signal sources (supplied) can be attached as follows.



1 Remove the plastic cover on the button.

2 Put the label (supplied) on top of the button.

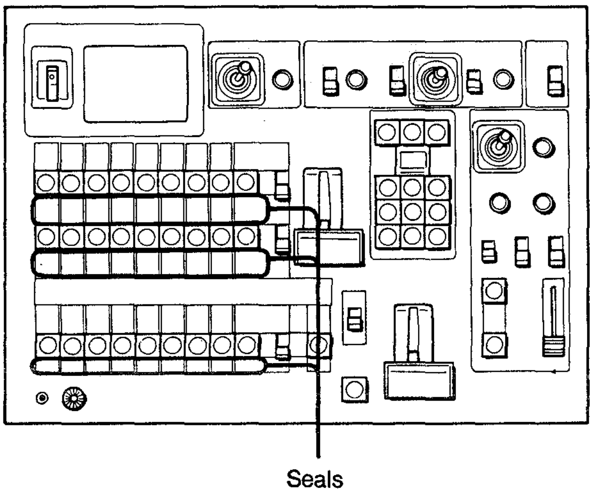
3 Replace the plastic cover.

- Transparent labels are also supplied. Write the signal sources on the labels, and attach them on the buttons.

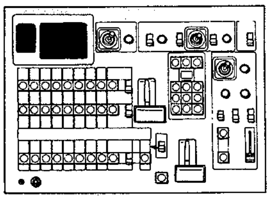
1-25-2. HOW TO USE THE SEAL

Affix the supplied seals below the bus select buttons. The signal sources can easily be written in with a water-soluble felt-tipped pen and then erased.

- An oil-based felt-tipped pen can also be used. In this case, erase the written letters with alcohol.

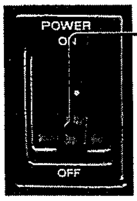


1-26. LOCATION AND FUNCTION OF PARTS AND CONTROLS



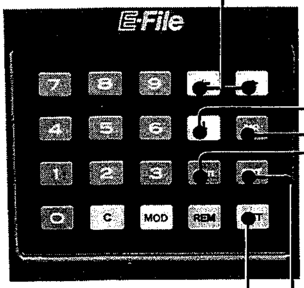
1-26-1. CONTROL PANEL

1 POWER switch



The power of the SEG-2550A/2550AP is turned on and off. To turn the power on, press the ON side, and to turn off, press the OFF side.

2 E-File section



←, → (event number select) keys
Press to shift the event number displayed on the display monitor. Place the event number for memorizing or recalling the data at the center.

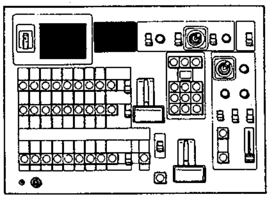
↓ (page change) key
One event is composed of three pages. To view the page not displayed, press this key. Every time this key is pressed, the displayed page changes by one.

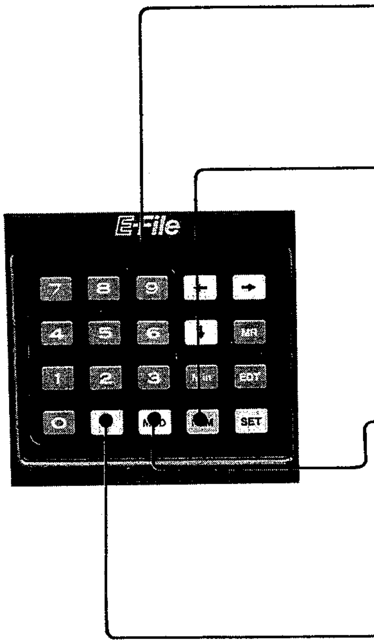
MR (memory read) key
Press to recall the memorized data. Place the event number to be recalled at the center of the display, and press this key.

Min (memory input) key
Press to memorize the setting of buttons and switches, and the movement of the levers and sticks in the E-File. Place the event number in which the data is to be memorized at the center, and press this key.

EDT key
Use for the operation of the BVE-900 linking with the E-File of the SEG-2550A/2550AP.
After recalling and executing the event, press this key so that the remote mode can be obtained with the recalled event remained effective.

SET key
Use for the E-File operation.





Number keys
Designate the sticks, levers and controls used for the transition and set to change the settings of the items of the mode.

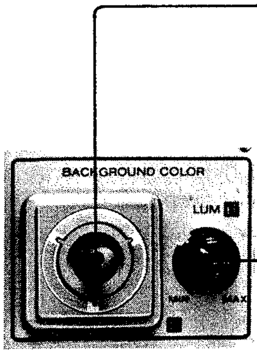
REM (remote) key
When the SEG-2550A/2550AP is controlled with external equipment such as a microcomputer or a BVE-900 editing control unit, press this key. The SEG-2550A/2550AP is set in the remote control mode, and the control mode is shown on the display monitor.

MOD (mode) key
Press this key to display the mode menu. Erasing data, turning the buzzer on and off, auto increment of an event number, and auto take of an event can be set.

C (clear) key
Press in the following cases.

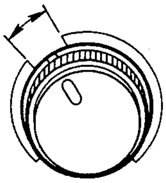
- To display the E-File data after the power is turned on, press once.
- To display the E-File data by interrupting or terminating the current mode, press once.
- To interrupt the execution of an event, press once.
- To terminate the recall mode of events, press twice.

3 BACKGROUND COLOR section

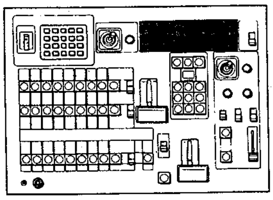


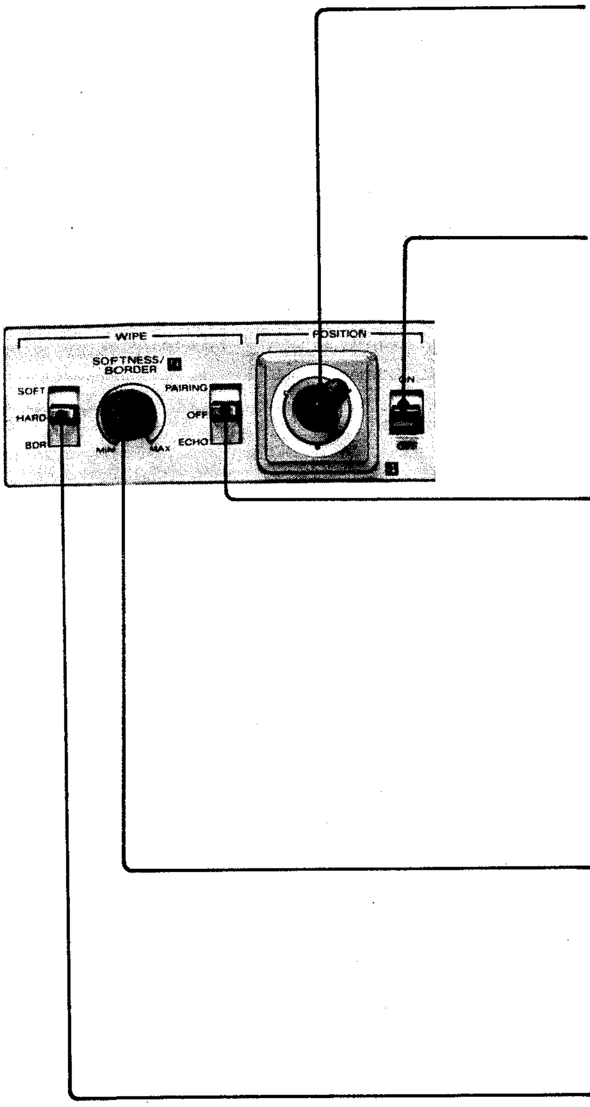
BACKGROUND COLOR stick
Adjusts the hue of the background color by rotating and the chroma level by tilting.
This stick is activated when the BACKGROUND button of the PST bus, A bus or B bus select button is pressed, and the BACKGROUND selector is set to COL.

LUM (luminance) control
Adjusts the brightness of the background color. Clockwise rotation brightens the color. Usually set the control within the range as shown below. If the control is set outside the indicated range, it is recommended to monitor the signal by a waveform monitor.



4 Wipe effect section





POSITION stick
Adjusts the center of the wipe pattern on the screen when the POSITION switch is set to ON. The position can be adjusted only with simple circle or rectangle patterns. For details, refer to "TABLE OF WIPE PATTERNS".

POSITION switch
Activates the POSITION stick operation.

ON : The POSITION stick operation is activated, and the center of the wipe pattern can be adjusted.

OFF : The pattern is placed at the center of the screen regardless of the POSITION stick setting.

PAIRING/ECHO selector
Adds the pairing or echo effects to the selected wipe pattern.

PAIRING : A stripe pattern wipes the picture from both sides in pairs : Odd lines wipe from one side, and even lines from the other.

OFF : Neither the pairing nor echo wipe is used. The picture is wiped by a standard pattern.

ECHO : At the edge of the wipe pattern, new picture is wiped in several steps of gradation on the original picture as echoed.

SOFTNESS/BORDER control
Adjusts the softness of the edge of the wipe pattern when the SOFT/HARD/BDR selector is set to SOFT. When the selector is set to BDR, adjusts the width of the border of the wipe pattern.

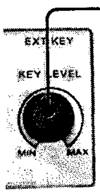
SOFT/HARD/BDR selector
Select the edge of the wipe pattern.

SOFT : For a soft edge of wipe pattern. The softness is controlled by the SOFTNESS/BORDER control.

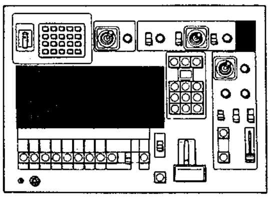
HARD : For a sharp edge of a wipe pattern.

BDR : To add a border to a wipe pattern. The width of the border is adjusted by the SOFTNESS/BORDER control, and the color is adjusted by the BACKGROUND COLOR stick and LUM control. The color is the complementary color of the indication.

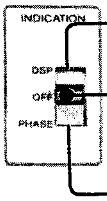
5 EXT KEY LEVEL control



Adjusts the key level of the key signal connected to the EXT KEY connector. Turn the control so that the pattern cut by the key signal will be clear.



6 INDICATION selector



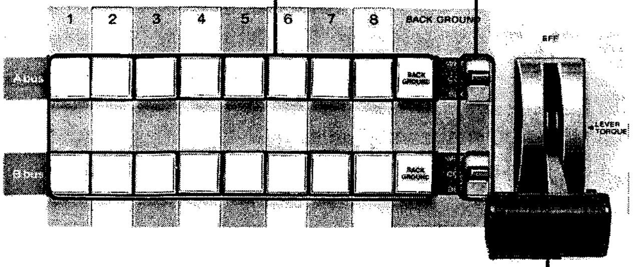
Selects what is displayed on the preset monitor.

DSP : The data of the E-File are displayed together with the picture selected by the PST bus select button.

OFF : The picture selected by the PST bus select button is displayed. In normal operation, use this position.

PHASE : For SC and H phase adjustment betweeen the SEG output signal and the external sync signal. When the PGM/PST selector is set to PGM, the phase indication pattern will appear on the preset monitor screen. Use this patten as a guide for phase adjustment.

7 A bus/B bus select section



A bus/B bus select buttons

Select the pictures used for wipe, mixing and external key. Pictures can be selected by A bus select buttons and B bus select buttons separately.

On the monitor screen, the picture selected by the bus to which the EFF lever is positioned is displayed.

The buttons 1 through 8 correspond to the VIDEO IN 1 through 8 connectors on the connector panel. When a button is pressed, the picture connected to the corresponding connector is selected.

When the BACKGROUND button is pressed, the signal generated by the built-in background color generator is output. The color of the background is adjusted by the BACKGROUND selector and the BACKGROUND COLOR stick and LUM control.

BACKGROUND selectors

Selects the background when the BACKGROUND button of the A bus or B bus select buttons is pressed.

WHT : White background

COL : Color background selected by the BACKGROUND COLOR stick

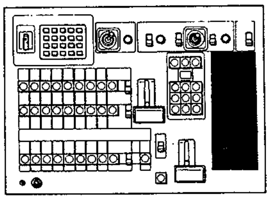
BLK : Black background

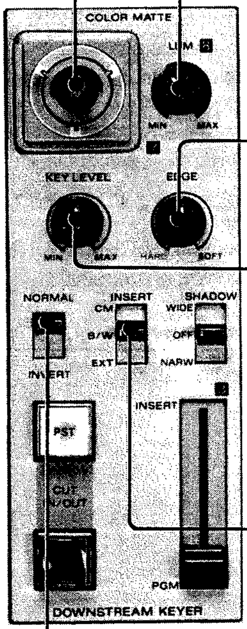
EFF (effect) lever

The A bus picture is gradually replaced with the B bus picture, or vice versa when the MIX or WIPE button is engaged. When the lever is moved to the uppermost position, the A bus picture will be obtained, and when the lever is moved to the lowermost position, the B bus picture will be obtained.

The torque of the lever can be adjusted. For details, refer to "ADJUSTING THE TORQUE OF THE LEVERS".

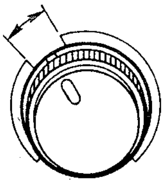
8 DOWNSTREAM KEYER section




COLOR MATTE
LUM
MIN
MAX
KEY LEVEL
EDGE
MIN
MAX
HARD
SOFT
NORMAL
INSERT
SHADOW
CM
WIDE
B/W
OFF
EXT
NARW
INVERT
INSERT
PST
CUT IN/OUT
PGM
DOWNSTREAM KEYER

COLOR MATTE stick
Adjust the color of the letters or figures inserted with the downstream keyer. The hue is adjusted by rotating the stick and the chroma level is adjusted by tilting the stick.
This stick is effective when the INSERT selector is set to CM.

LUM (luminace) control
Adjusts the brightness of the color selected by the COLOR MATTE stick. Clockwise rotation brightens the color. Usually, set the control within the range as shown below. If the control is to set outside the range, it is recommended to monitor the signal with a waveform monitor.

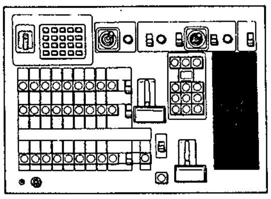


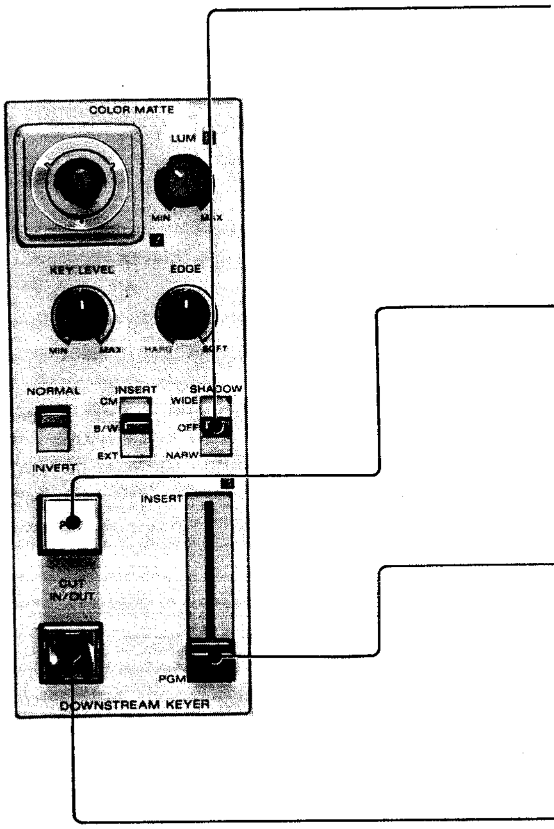
EDGE control
The edge of the letters and figures inserted with the downstream keyer is adjusted.

KEY LEVEL control
Adjusts the downstream keying level.

INSERT selector
CM : To color the inserted letters and figures with the built-in color matt generator. The color is selected by the COLOR MATTE stick and LUM control.
B/W : The inserted letters and figures will be monochrome.
EXT : When the letters from the SMC-70G/70GP microcomputer are inserted, the color supplied by the computer is used.

NORMAL/INVERT selector
NORMAL : When keying black letters against a white background.
INVERT : When keying white letters against a black background.




COLOR MATTE
LUM
MIN
MAX
KEY LEVEL
EDGE
MIN
MAX
HARD
SOFT
NORMAL
INSERT
SHADOW
CM
B/W
EXT
WIDE
OFF
NARW
INVERT
INSERT
CUT IN/OUT
PGM
DOWNSTREAM KEYER

SHADOW selector

WIDE: To produce a wide shadow to the downstream keying signal.

OFF: No shadow

NARROW: To produce a narrow shadow to the downstream keying signal.

- When the letters are inserted by a microcomputer, the shadow is not added.

PST CUT IN/OUT button

Press to cut in or cut out the keying signal on the picture on the preset monitor to check the downstream keying. The button lights when the letters are inserted. When the button is pressed again, the letters disappear and the button light goes out.

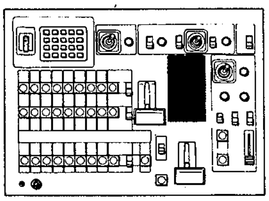
INSERT lever

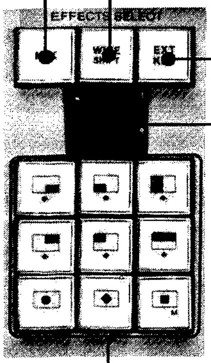
Move the lever to INSERT position to gradually insert the letters to the program picture and move the lever to PGM position to remove the letters. At the PGM position no letter will appear. When the letters are inserted, the PGM CUT IN/OUT button lights.

PGM CUT IN/OUT button

Press to cut in or cut out the letters to the program picture. The button lights when the letters are inserted.

9 EFFECTS SELECT section





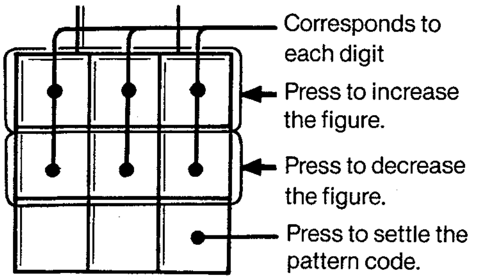
MIX (mixing) button
Press to mix the A bus and B bus pictures with the EFF lever. The button will light.

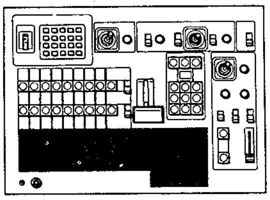
WIPE/SHIFT button
Press to wipe the A bus picture with the B bus picture or vice versa with the EFF lever.
When this button is pressed once, the button and the upper left button light and the wipe pattern is selected by the wipe pattern select buttons.
When the button is pressed again, the figures appear on the pattern code indication window, and the lower right M button starts blinking. In this condition, the wipe pattern is selected by the pattern code of three digits. The upper two-row buttons of the wipe pattern select buttons function to designate the pattern code.

EXT KEY (external key) button
Press to key the A bus and B bus pictures using the input signal from the EXT KEY connector. The button will light.

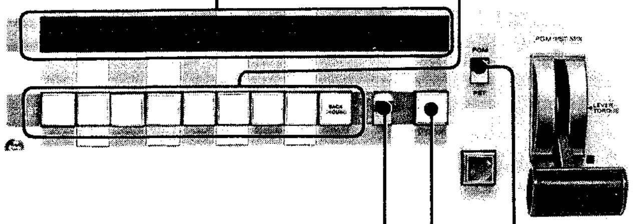
Pattern code indication window
When the wipe pattern is designated by the pattern code, the code number is displayed here. Display the code number by pressing the WIPE/SHIFT button, and designate the pattern code.

Wipe pattern select buttons
Press to select the wipe pattern to be used. There are two methods to select a wipe pattern. One is to select the pattern by pressing the appropriate button, and the pattern printed on the button is selected.
The other is to select the pattern by designating the pattern code of three digits. Set the figures in the pattern code indication window by pressing the upper two-row buttons, then press the M button. And the pattern whose pattern code is displayed in the window is selected. As for the pattern code, refer to "TABLE OF WIPE PATTERNS".
The above two methods are cyclically changed every time the WIPE/SHIFT button is pressed.


Corresponds to each digit
Press to increase the figure.
Press to decrease the figure.
Press to settle the pattern code.



10 PGM/PST select section



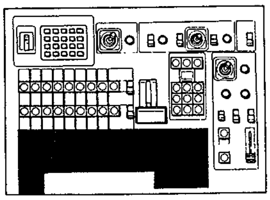
PGM (program) indicator
The number of the picture which is supplied from the PGM OUT connector (program picture) lights. The program picture is selected by the PST bus select buttons.
When the BACKGROUND button is pressed, the setting of the BACKGROUND switch is indicated: When the EFF button is pressed, the EFFECTS indicator lights while the designated effect is being executed.

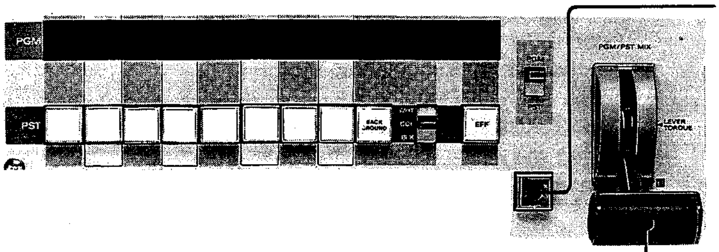
PST (preset) bus select buttons
Select the output signal from the PGM and PST OUT connectors when the PGM/PST selector is set to PGM. The pressed button and the corresponding PGM indicator light. When the selector is set to PST, select the output signal from the PST OUT connectors. The pressed button lights.
The buttons 1 through 8 correspond to the VIDEO IN 1 through 8 connectors on the connector panel. When a button is pressed, the picture connected to the corresponding connector is selected.
When the BACKGROUND button is pressed, the signal generated by the built-in background color generator is selected. The color of the background is adjusted by the BACKGROUND selector and the BACKGROUND COLOR stick and LUM control.

PGM/PST selector
PGM : The output signals from the PGM OUT and PST OUT connectors are simultaneously selected by the PST bus select buttons.
PST : The output signal from the PST OUT connectors is selected by the PST bus select buttons.

EFF button
Press to use the effect selected by the EFFECTS SELECT buttons.

BACKGROUND selector
Selects the background color when the BACKGROUND button of the PST bus select buttons is pressed.
WHT : White background
COL : Color background selected by the BACKGROUND COLOR stick
BLK : Black background

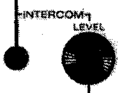




TAKE button
Instantaneously switches the preset picture and program picture. This button also functions as the trigger of the E-File operation.
Normally the button is not lit. While the E-File is controlled in the remote mode, the button is lit. The blinking of this button indicates the standby mode of the E-File operation, and in this mode, the control panel of the SEG-2550A/2550AP cannot be activated.

PGM/PST MIX lever
The program picture is gradually replaced with the preset picture when the PGM/PST selector is set to PST.
This lever is used for mixing of the pictures selected by the PST select buttons. The position of the lever is not assigned to either the program or preset picture. The pictures will be interchanged each time the lever is move from one position to the other.
The torque of the lever can be adjusted. For details, refer to "ADJUSTING THE TORQUE OF LEVERS".

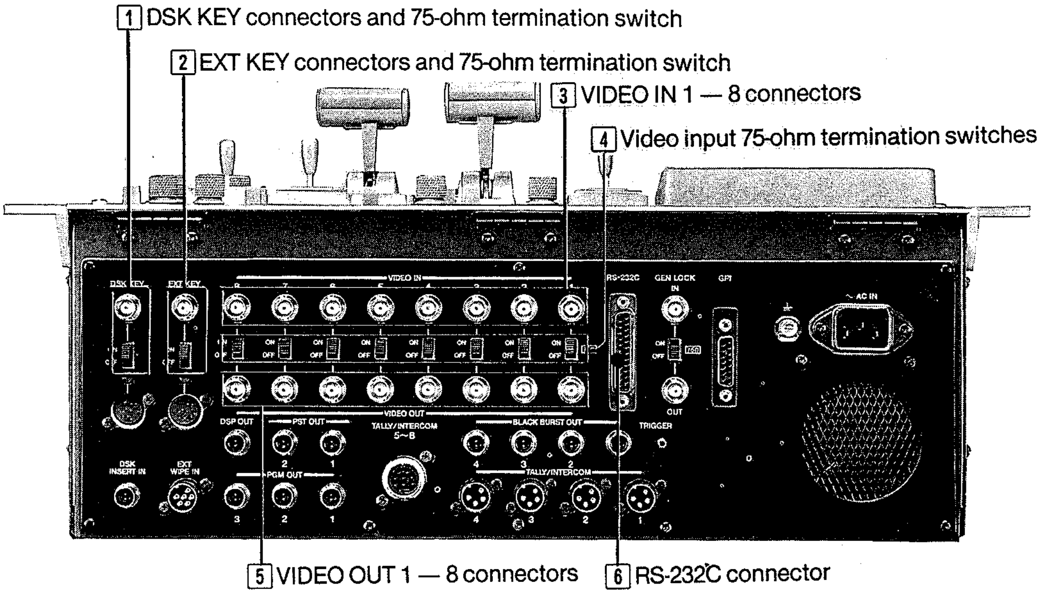
11 INTERCOM section



INTERCOM jack (minijack)
Connect the Sony DR-100 intercom headset (optional) here to allow communication between the SEG-2550A/2550AP and the equipment connected to the TALLY/INTERCOM connectors. The mixed intercom sound of intercom 1 through 4 and 5 through 8 can be heard.

LEVEL control
Adjusts the sound level received from the equipment connected to the TALLY/INTERCOM 1 through 4 connectors. The intercom level of intercom 5 through 8 is adjusted by the volume inside the unit.

1-26-2. CONNECTOR PANEL


1 DSK KEY connectors and 75-ohm termination switch
2 EXT KEY connectors and 75-ohm termination switch
3 VIDEO IN 1 — 8 connectors
4 Video input 75-ohm termination switches
DSK KEY
EXT KEY
VIDEO IN
RS-232C
GEN LOCK IN
GPI
AC IN
ON
OFF
DSK OUT
PST OUT
VIDEO OUT
TALLY/INTERCOM 5~8
BLACK BURST OUT
OUT
TRIGGER
DSK INSERT IN
EXT WIPE IN
PGM OUT
TALLY/INTERCOM
5 VIDEO OUT 1 — 8 connectors
6 RS-232C connector

1 DSK KEY (downstream keyer) connectors (BNC type, DIN 6-pin) and 75-ohm termination switch

Connect a video signal for downstream keyer operation. Connect either a black and white video camera to the DIN 6-pin connector or a video signal synchronized with the SEG-2550A/2550AP such as the signal from the SMC-70G/70GP micro computer to the BNC connector, and set the 75-ohm termination switch to ON.

The video signal connected to the DIN 6-pin connector can be monitored by connecting a video monitor to the BNC connector. In this case, set the 75-ohm termination switch to OFF.

2 EXT KEY (external key) connectors (BNC type, DIN 6-pin) and 75-ohm termination switch

Connect a video signal for external key operation. Connect either a black and white video camera to the DIN 6-pin connector or a video signal synchronized with the SEG-2550A/2550AP to the BNC connector, and set the 75-ohm termination switch to ON.

The video signal connected to the DIN 6-pin connector can be monitored by connecting a video monitor to the BNC connector. In this case, set the 75-ohm termination switch to OFF.

3 VIDEO IN 1 — 8 connectors (BNC type)

Connect video signals from video cameras, VTRs which are connected to time base correctors, etc. The connected signals should be synchronized with the SEG-2550A/2550AP.

4 Video input 75-ohm termination switches

These are the termination switches connected to the VIDEO IN 1 — 8 connectors. Normally set to ON.

When any of the VIDEO OUT 1 — 8 connectors is used, set the corresponding switch to OFF.

5 VIDEO OUT 1 — 8 connectors (BNC type)

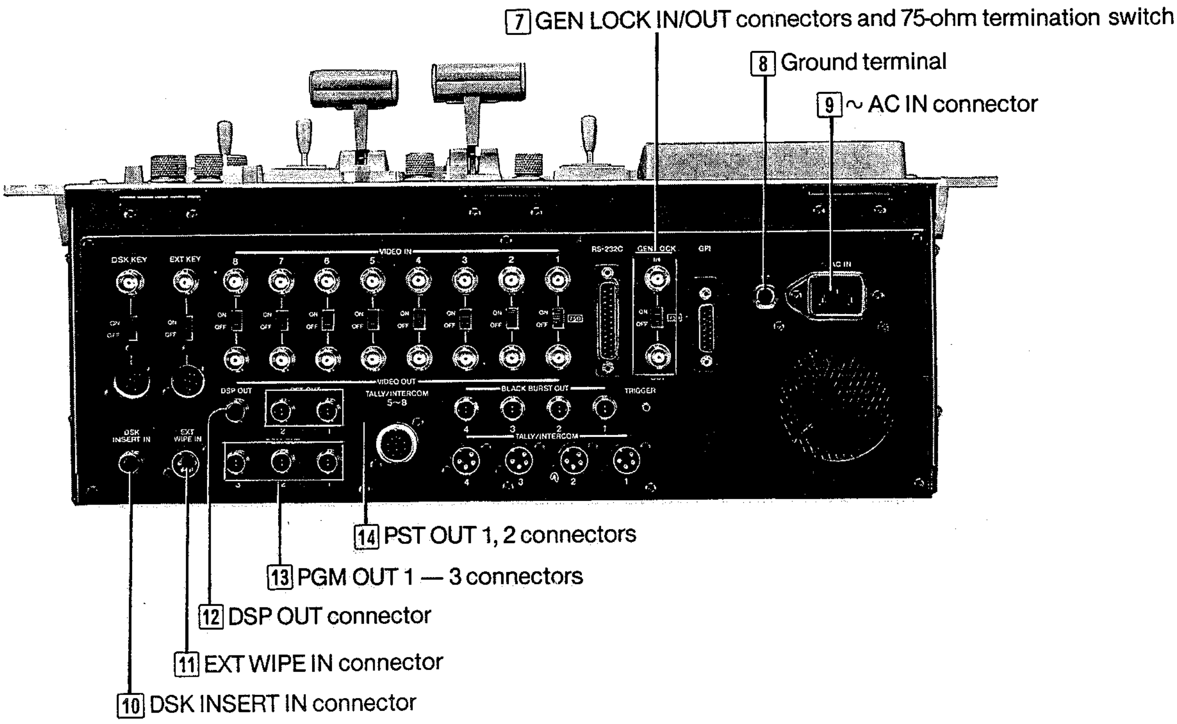
The video signals connected to the above VIDEO IN connectors are fed out from these connectors (loop-through output). Connect to the video input connectors on a video monitor to monitor the video signal connected to the VIDEO IN connector directly.

When these connectors are used, be sure to set the corresponding 75-ohm termination switches to OFF.

When they are not being used, set these switches to ON.

6 RS-232C connector (25-pin multi connector)

When the SEG-2550A/2550AP is controlled by external equipment such as a BVE-900 editing control unit connect control signals from the equipment. For details of the control signals, consult your authorized Sony dealer.


7 GEN LOCK IN/OUT connectors and 75-ohm termination switch
8 Ground terminal
9 ∿ AC IN connector
DSK KEY
EXT KEY
VIDEO IN
RS-232C
GEN LOCK
GPI
AC IN
DSP OUT
VIDEO OUT
TALLY/INTERCOM 5~8
BLACK BURST OUT
TRIGGER
DSK INSERT IN
EXT WIPE IN
TALLY/INTERCOM
14 PST OUT 1, 2 connectors
13 PGM OUT 1 — 3 connectors
12 DSP OUT connector
11 EXT WIPE IN connector
10 DSK INSERT IN connector

7 GEN LOCK IN/OUT (generator lock input/output) connectors (BNC type) and 75-ohm termination switch
Connect a reference VBS or black burst signal to the GEN LOCK IN connector to synchronize the SEG-2550A/2550AP with an external sync signal such as a house sync signal, etc. All equipment connected to the SEG will then be synchronized with this reference signal.
The reference signal connected to the GEN LOCK IN connector is fed out from the GEN LOCK OUT connector (loop-through output). Connect to the gen-lock input connector of the equipment which should be synchronized with the same reference signal. When the GEN LOCK OUT connector is used, be sure to set the 75-ohm termination switch to OFF. When it is not being used, set the switch to ON.

8 Ground terminal (⏚)
Connect to a good ground when required.

9 ∿ AC IN connector
Connect the supplied ac power cord here.

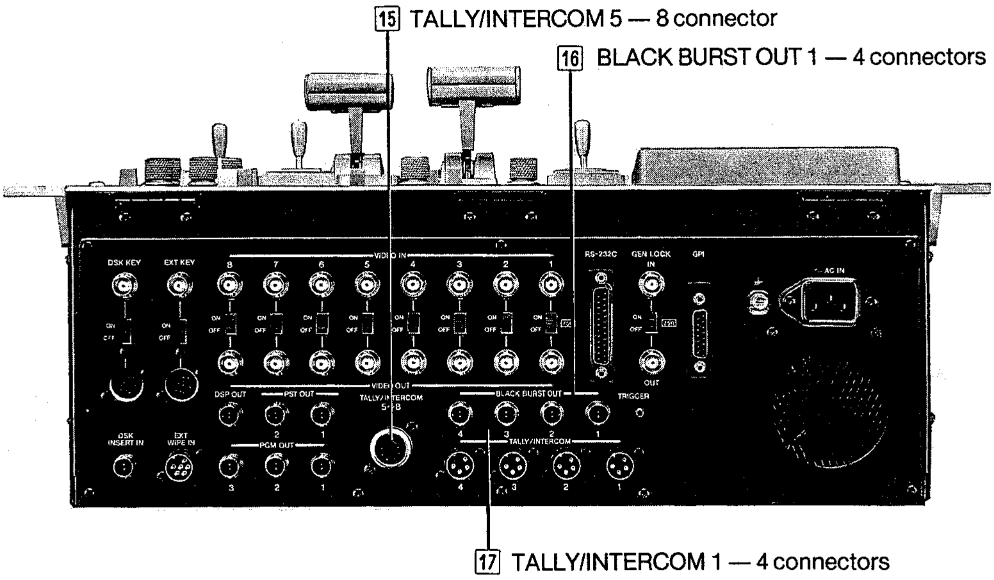
10 DSK INSERT IN (downstream keyer insert) connector (BNC type)
When the letters of the downstream keyer are inserted by the SMC-70G/70GP microcomputer, and the color supplied by the computer is used, connect the OUT connector of the SMI-7074 NTSC superimposer or the SMI-7074P PAL superimposer installed into the SMC-70G/70GP.

11 EXT WIPE IN (external wipe signal input) connector (DIN 6-pin)
Connect the optional Sony WEX-2000/2000P wipe pattern extender, etc.

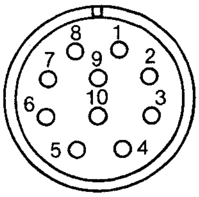
12 DSP OUT (display output) connector (BNC type)
Connect to a video input connector of a black and white video monitor (display monitor) to monitor the data and information of the E-File.

13 PGM OUT (program output) 1 — 3 connectors (BNC type)
Connect to the video input connectors of a video monitor, VTRs, etc. The signals of the program picture are output here.

14 PST OUT (preset output) 1, 2 connectors (BNC type)
Connect to the video input connectors on the preset monitors. The preset picture selected by the PST bus select buttons are output here.


15 TALLY/INTERCOM 5 — 8 connector
16 BLACK BURST OUT 1 — 4 connectors
17 TALLY/INTERCOM 1 — 4 connectors

15 TALLY/INTERCOM 5 — 8 connector (10 pin)
This is the tally/intercom connector for the equipment connected to the VIDEO IN 5 — 8 connectors.The pin assignment of this connector is as shown below. Make the cable using the supplied connector to fit the connector of the tally-intercom system connected here.

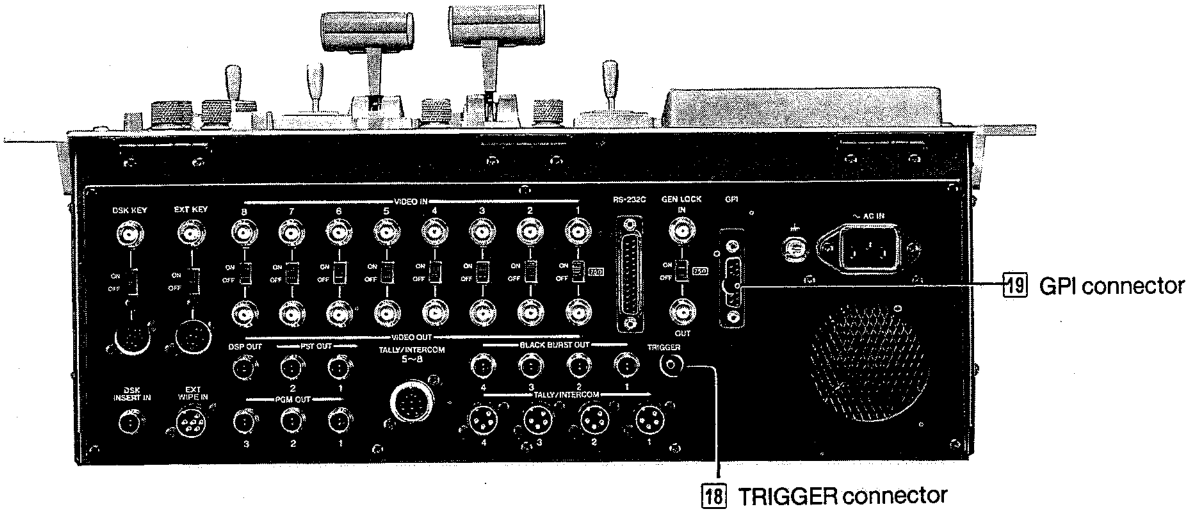


Pin No.	Signal
1	TALLY (5)
2	TALLY (6)
3	TALLY (7)
4	NC
5	NC
6	TALLY (8)
7	INCOM
8	INCOM (G)
9	TALLY (COMMON)
10	NC

16 BLACK BURST OUT 1 — 4 connectors (BNC type)
Black burst (sync 0.3 V p-p, burst 0.3 V p-p) signals generated by the built-in sync generator are output here. Connect these outputs to the GEN LOCK IN connectors of the video equipment being used so that the equipment will be synchronized with the SEG-2550A/2550AP.
The same black burst signal is output at each connector in parallel. The 1 to 4 connectors are independent of the VIDEO IN connectors.

17 TALLY/INTERCOM 1 — 4 connectors (DIN 4-pin)
These are the connectors for the tally/intercom of the equipment connected to the VIDEO IN 1 — 4 connectors. Connect to the tally/intercom connector of a camera or a camera control unit using a CCDD cable. When a headset is connected to the INTERCOM connector on the control panel, the communication between the SEG and the camera operators is possible.
The TALLY/INTERCOM 1 to 4 connectors correspond to the VIDEO IN 1 to 4 connectors.

- The tally circuit incorporates a relay with a maximum pickup value of 24 V, 200 mA DC.

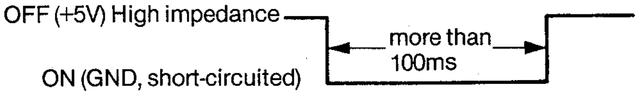

DSK KEY
EXT KEY
VIDEO IN
RS-232C
GEN LOCK IN
GPI
AC IN
OUT
VIDEO OUT
DSP OUT
PST OUT
TALLY/INTERCOM 5~8
BLACK BURST OUT
TRIGGER
DSK INSERT IN
EXT WIPE IN
PGM OUT
TALLY/INTERCOM
19 GPI connector
18 TRIGGER connector

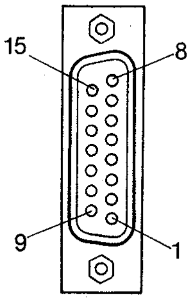
18 TRIGGER connector (special minijack)

This is the connector to trigger the E-File operation by an external equipment. Connect to the control connector for tape on the SMC-70G/70GP microcomputer.
When the control signal generated by the Q-Manager of the SMC-70G/70GP, the same function as the TAKE button pressed can be obtained.

19 GPI connector (15 pin)

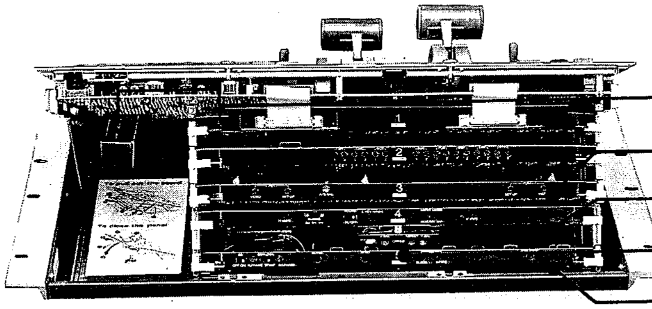
This is a connector to trigger the TAKE button function and the cut in and cut out function of the downstream keyer with external equipment. Using this connector, the MR and Min operations of the E-File can be remotely controlled.
The signal required for this connector is the same as that of the TRIGGER connector, and the following conditions should be satisfied.


OFF (+5V) High impedance
ON (GND, short-circuited)
more than 100ms

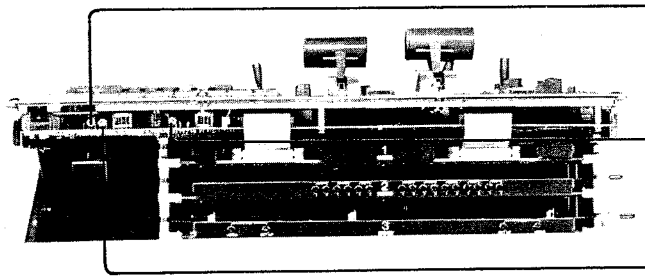


Pin No.	Signals
1	TAKE
2	TAKE (GND)
3	DSK CUT IN/OUT
4	DSK CUT IN/OUT (GND)
5—15	NC

1-26-3. INSIDE THE UNIT


Beneath the control panel
3 EF-13 board
4 WP-20 board
WP-21 board
5 SD-17 board

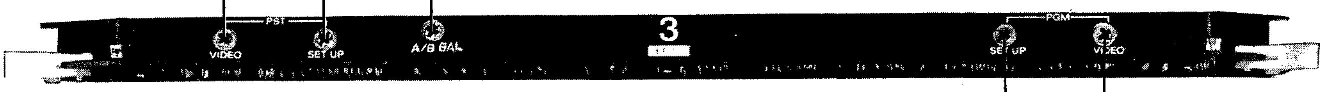
Beneath the control panel


Tally/intercome 5 — 8 side tone control
Adjusts the side tone of the tally/intercom 5 to 8.

Tally/intercome 1 — 4 side tone control
Adjusts the side tone of the tally/intercom 1 to 4.

Tally/intercome 5 — 8 level control
Adjusts the level of the tally/intercom 5 to 8.

3EF-13 board



PST VIDEO (preset video level) control volume
Adjusts the video level of the output signal from the PST OUT connectors.

PST SET UP (preset set up level) control volume
Adjusts the set up level of the output signal from the PST OUT connectors.

A/B BAL (balance) control volume
Adjusts and equalizes the setup level of the A bus and the B bus when making a "Wipe effect".

PGM SET UP (program set up level) control volume
Adjusts the set up level of the output signal from the PGM OUT connectors.

PGM VIDEO (program video level) control volume
Adjusts the video level of the output signal from the PGM OUT connectors.

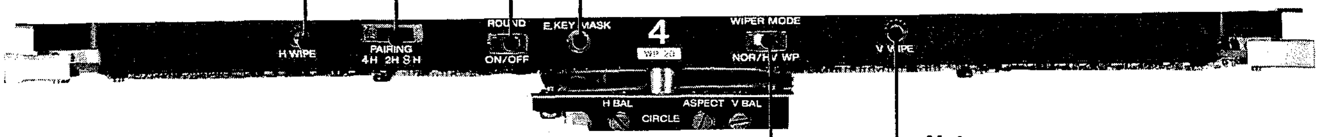
4 WP-20 board

H WIPE (width of wipe pattern) volume
When the WIPER MODE selector is set to HV WP, the horizontal length of the wipe pattern is changed.

PAIRING selector
Select the line width of pairing wipe by designating the number of the scanning lines.
4H : 4 scanning lines
2H : 2 scanning lines
8H : 8 scanning lines

ROUND switch
ON : Corners of the wipe pattern will be rounded.
OFF : Standard wipe pattern is obtained.

E. KEY MASK (external key mask) control volume
During the external key operation, mask the blanking pulse of the black and white camera connected to the EXT KEY connector if it appears.

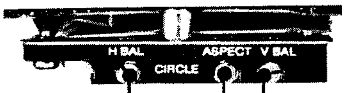


WIPER MODE selector
NOR : The pattern of the standard width/height ratio is obtained.
HV WP : The width/height ratio of the wipe pattern can be changed. Adjust the ratio by the H WIPE and V WIPE volumes.

Note
When the wipe pattern is extremely changed from the standard, the screen may not be wiped completely.

V WIPE (height of wipe pattern) control volume
When the WIPER MODE selector is set to HV WP, the vertical length of the wipe pattern is changed.

WP-21 board



V BAL (vertial balance) control volume
The vertical balance of the round wipe is adjusted.

ASPECT control volume
The circularity (vertical/horizontal ratio) of the round wipe is adjusted.

H BAL (horizontal balance) control volume
The horizontal balance of the round wipe is adjusted.

5 SD-17 board

BS switch
Selects the burst and sync signals of the output signals from the PGM OUT and PST OUT connectors.

OFF : The burst and sync signals of the input signal are output as they are.

ON : The burst and sync signals of the input signal are replaced with the signals generated by the sync signal generator built-in the unit, and are output.

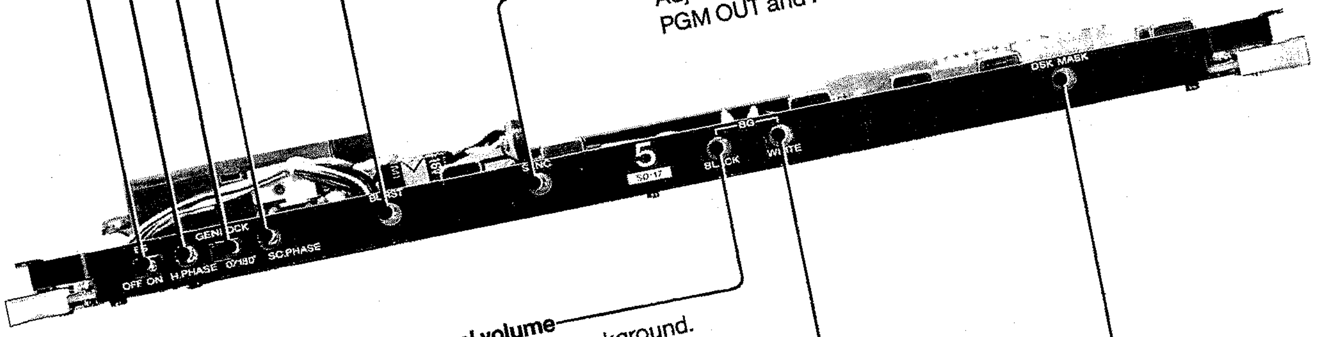
H.PHASE (horizontal phase) control volume
Adjusts the phases of the horizontal sync signal of the gen-lock reference signal and the output signal of the SEG-2550A/2550AP.

GEN LOCK select switch
This switch roughly adjusts the subcarrier phase of the PGM output signal to the subcarrier phase of the gen-lock reference signal.

SC.PHASE (subcarrier phase) control volume
Adjusts the SC phase of the PGM output signal to the subcarrier phase of the gen-lock reference signal precisely. After adjusting the phase roughly by the GEN LOCK switch, adjust this volume.

BURST (burst level) control volume
Adjusts the burst level of the output signals from the PGM OUT and PST OUT connectors.

SYNC (sync signal level) control volume
Adjusts the sync signal level of the output signals from the PGM OUT and PST OUT connectors.



BG BLACK (background black level) control volume
Adjusts the black level when the BLK is selected as background.

BG WHITE (background white level) control volume
Adjusts the white level when the WHT is selected as background.

DSK MASK (downstream keyer mask) control volume
During the downstream keyer operation, masks the blanking pulse of the black and white camera connected to the DSK KEY connector if it appears.

1-27. TABLE OF WIPE PATTERNS

Wipe No.	000	001	002	006	010	011	012	016	020	021	022	023
Position	—	—	—	—	—	—	—	—	—	—	—	—
Pairing	*	*	*	*	*	*	*	*	*	*	*	*
Echo	*	*	*	*	*	*	*	*	*	*	*	*
Bord/Soft	*	*	*	*	*	*	*	*	*	*	*	*

Wipe No.	026	030	031	032	040	041	042	043	044	045	046	047
Position	—	—	—	—	—	—	*	—	—	—	—	—
Pairing	—	—	—	—	—	—	—	—	—	—	—	—
Echo	—	—	—	—	—	—	—	—	—	—	—	—
Bord/Soft	—	—	—	—	—	—	—	—	—	—	—	—

Wipe No.	050	051	052	053	054	055	056	057	060	067	070	101
Position	—	—	—	—	—	—	—	—	—	—	—	—
Pairing	*	*	*	*	*	*	*	*	*	*	*	*
Echo	*	*	*	*	*	*	*	*	*	*	*	*
Bord/Soft	*	*	*	*	*	*	*	*	*	*	*	*

Wipe No.	102	103	104	105	106	107	111	112	113	114	115	117
Position	—	*	—	—	—	—	—	—	—	—	—	—
Pairing	*	*	*	*	*	*	*	*	*	*	*	*
Echo	*	*	*	*	*	*	*	*	*	*	*	*
Bord/Soft	*	*	*	*	*	*	*	*	*	*	*	*

Wipe No.	121	122	124	125	131	133	134	135	136	140	141	142
Position	—	—	—	—	—	—	*	—	—	—	—	—
Pairing	*	*	*	*	*	*	*	*	*	*	*	*
Echo	*	*	*	*	*	*	*	*	*	*	*	*
Bord/Soft	*	*	*	*	*	*	*	*	*	*	*	*

Wipe No.	143	144	145	146	147	150	151	152	153	154	155	157
Position	—	—	—	—	—	—	—	—	—	—	—	—
Pairing	*	*	*	*	*	*	*	*	*	*	*	**
Echo	*	*	*	*	*	*	*	*	*	*	*	*
Botd/Soft	*	*	*	*	*	*	*	*	*	*	*	*

Wipe No.	160	161	162	163	164	165	166	177	200	201	202	203
Position	—	—	—	—	—	—	—	—	—	—	—	—
Pairing	*	*	*	*	*	*	*	*	—	—	—	—
Echo	*	*	*	*	*	*	*	*	*	*	*	*
Bord/Soft	*	*	*	*	*	*	*	*	*	*	*	*

Wipe No.	204	206	207	210	211	212	213	214	216	220	221	222
Position	—	—	—	—	—	—	—	—	—	—	—	—
Pairing	—	—	—	—	—	—	—	—	—	—	—	—
Echo	*	*	*	*	*	*	*	*	*	*	*	*
Bord/Soft	*	*	*	*	*	*	*	*	*	*	*	*

Wipe No.	223	224	230	231	232	233	234	240	241	242	243	244
Position	—	—	—	—	—	—	—	—	—	—	—	—
Pairing	—	—	—	—	—	—	—	—	—	—	—	—
Echo	*	*	*	*	*	*	*	*	*	*	*	*
Bord/Soft	*	*	*	*	*	*	*	*	*	*	*	*

Wipe No.	265	266	270	271	272	273	274	276	277	300	301	302
Position	—	—	—	—	—	—	—	—	—	—	—	—
Pairing	—	—	—	—	—	—	—	—	—	—	—	—
Echo	*	*	*	*	*	*	*	*	*	—	—	—
Bord/Soft	*	*	*	*	*	*	*	*	*	—	—	—

Wipe No.	246	247	250	251	252	254	255	256	257	260	262	263
Position	—	—	—	—	—	—	—	—	—	—	—	—
Pairing	—	—	—	—	—	—	—	—	—	—	—	—
Echo	*	*	*	*	*	*	*	*	*	*	*	*
Bord/Soft	*	*	*	*	*	*	*	*	*	*	*	*

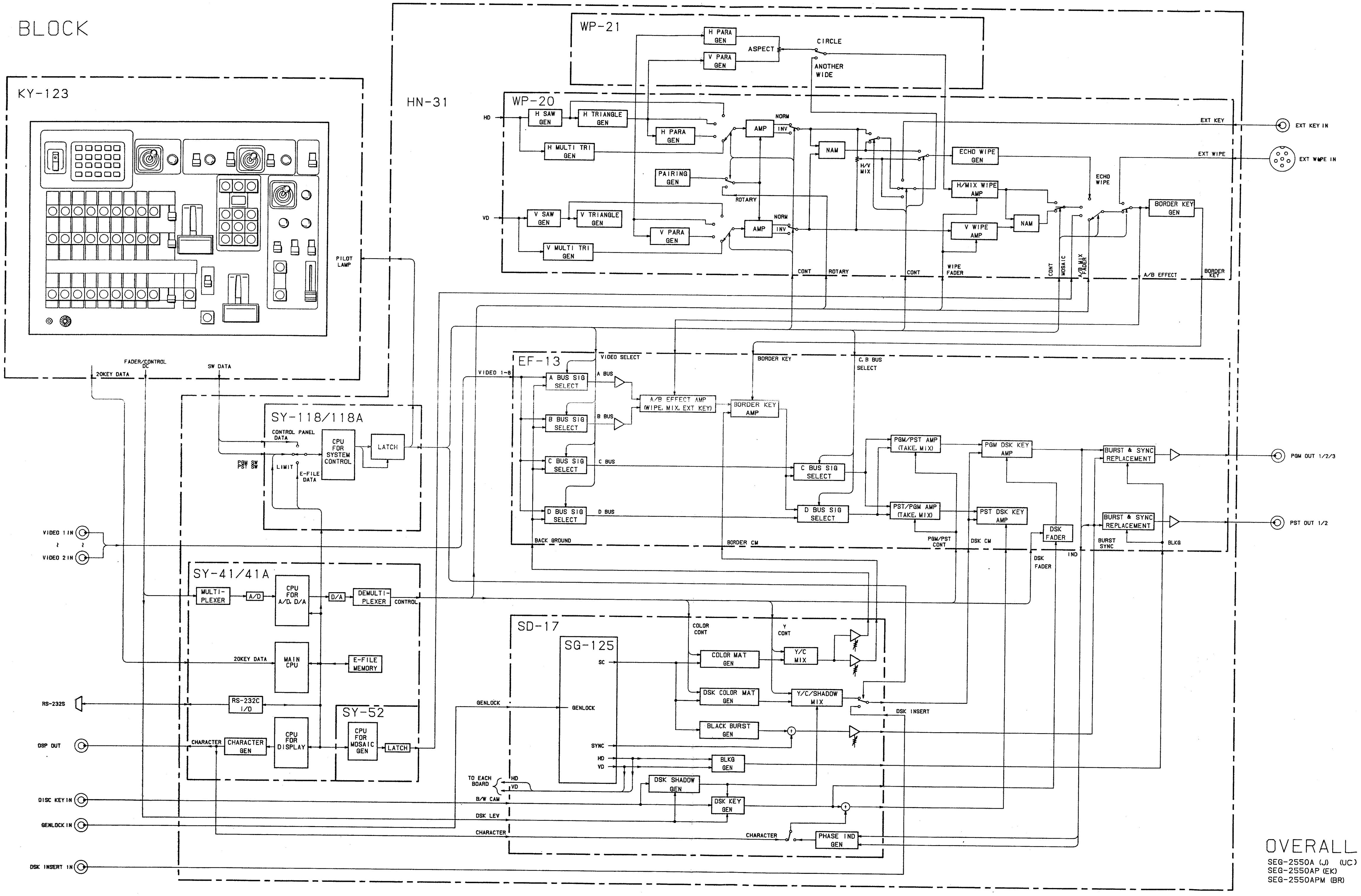
		RND			
Wipe No.	303	304	305	306	307
Position	—	—	—	—	—
Pairing	—	—	—	—	—
Echo	—	—	—	—	—
Bord/Soft	—	—	—	—	—

* : can be performed with the pattern.
— : cannot be performed with the pattern.

SECTION2
DIAGRAM

2-1. BLOCK DIAGRAM

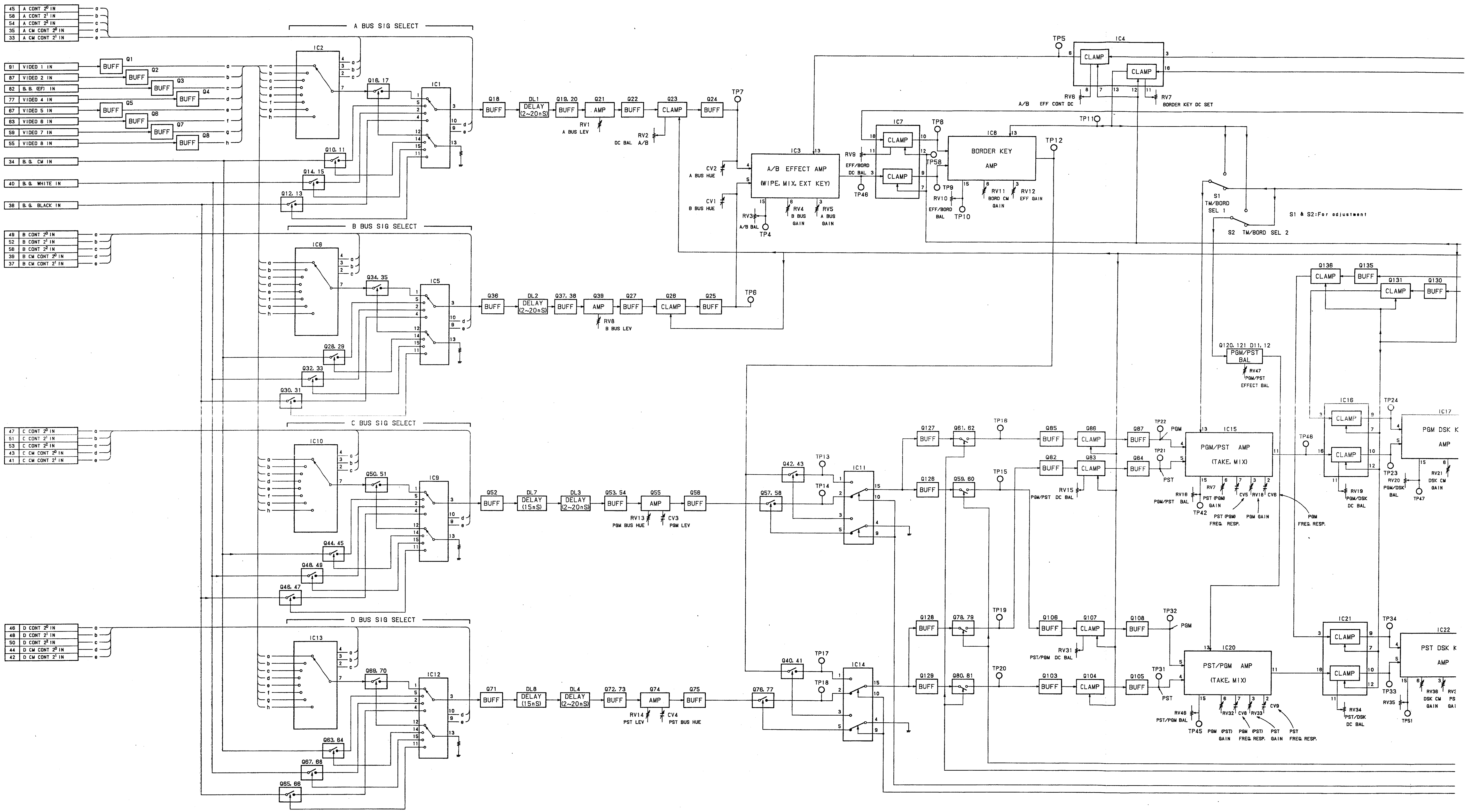
OVERALL BLOCK

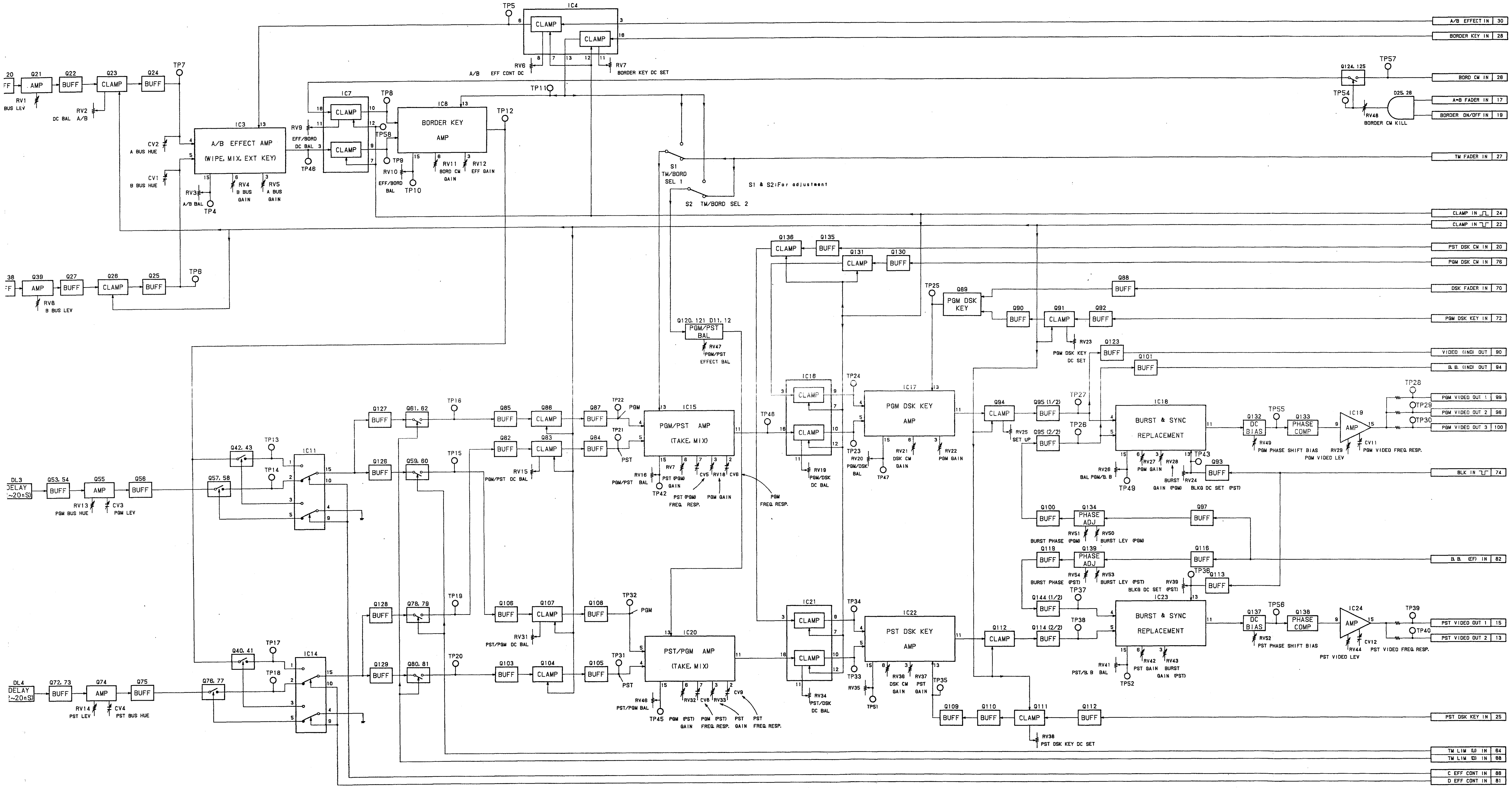

KY-123
PILOT LAMP
FADER/CONTROL DC
20KEY DATA
SW DATA
HN-31
WP-21
H PARA GEN
V PARA GEN
ASPECT
CIRCLE
ANOTHER WIDE
WP-20
HD
VD
H SAW GEN
H TRIANGLE GEN
H MULTI TRI GEN
H PARA GEN
PAIRING GEN
ROTARY
V SAW GEN
V TRIANGLE GEN
V PARA GEN
V MULTI TRI GEN
AMP
NORM
INV
AMP
NORM
INV
NAM
H/V MIX
ECHO WIPE GEN
H/MIX WIPE AMP
V WIPE AMP
NAM
ECHO WIPE
BORDER KEY GEN
EXT KEY
EXT KEY IN
EXT WIPE
EXT WIPE IN
CONT
ROTARY
CONT
WIPE FADER
CONT
MOSAIC
A/B MIX FADER
A/B EFFECT
BORDER KEY
SY-118/118A
CONTROL PANEL DATA
PGM SW
PST SW
LIMIT
E-FILE DATA
CPU FOR SYSTEM CONTROL
LATCH
EF-13
VIDEO SELECT
VIDEO 1~8
A BUS SIG SELECT
A BUS
B BUS SIG SELECT
B BUS
C BUS SIG SELECT
C BUS
D BUS SIG SELECT
D BUS
BACK GROUND
A/B EFFECT AMP (WIPE, MIX, EXT KEY)
BORDER KEY
BORDER KEY AMP
BORDER CM
C, B BUS SELECT
C BUS SIG SELECT
D BUS SIG SELECT
PGM/PST AMP (TAKE, MIX)
PST/PGM AMP (TAKE, MIX)
PGM/PST CONT
PGM DSK KEY AMP
PST DSK KEY AMP
DSK CM
DSK FADER
DSK FADER
IND
BURST & SYNC REPLACEMENT
BURST & SYNC REPLACEMENT
BURST SYNC
BLKG
PGM OUT 1/2/3
PST OUT 1/2
VIDEO 1 IN
VIDEO 2 IN
SY-41/41A
MULTI-PLEXER
A/D
CPU FOR A/D, D/A
D/A
DEMULTI-PLEXER
CONTROL
20KEY DATA
MAIN CPU
E-FILE MEMORY
RS-232S
RS-232C I/O
SY-52
CPU FOR MOSAIC GEN
LATCH
DSP OUT
CHARACTER
CHARACTER GEN
CPU FOR DISPLAY
DISC KEY IN
GENLOCK IN
DSK INSERT IN
SD-17
SG-125
SC
GENLOCK
GENLOCK
SYNC
HD
VD
TO EACH BOARD
HD
VD
B/W CAM
DSK LEV
CHARACTER
COLOR CONT
Y CONT
COLOR MAT GEN
Y/C MIX
DSK COLOR MAT GEN
Y/C/SHADOW MIX
DSK INSERT
BLACK BURST GEN
BLKG GEN
DSK SHADOW GEN
DSK KEY GEN
CHARACTER
PHASE IND GEN

OVERALL BLOCK

SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

EF-13 BLOCK

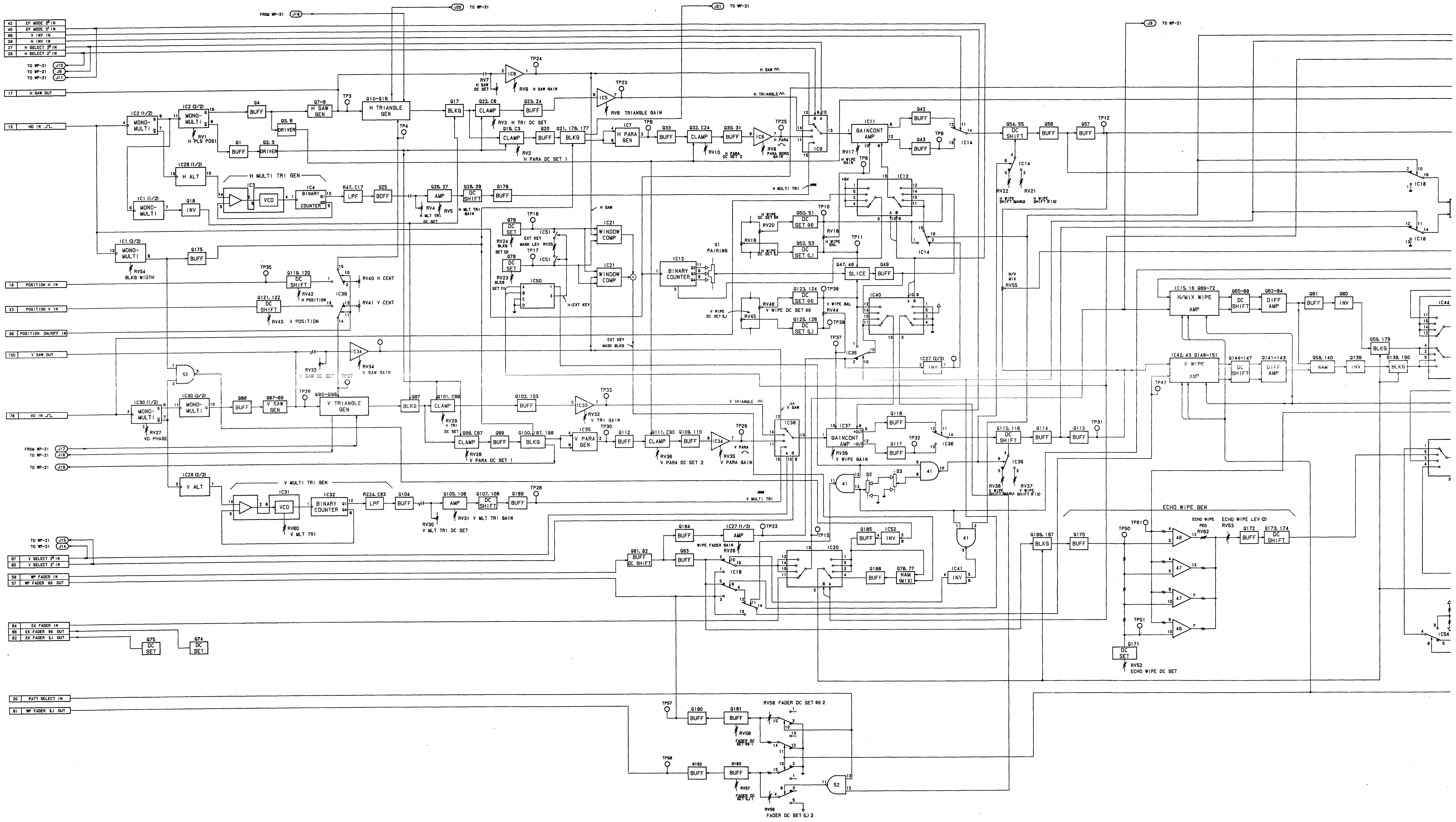

45 A CONT 2⁰ IN
58 A CONT 2¹ IN
54 A CONT 2² IN
35 A CM CONT 2⁰ IN
33 A CM CONT 2¹ IN
91 VIDEO 1 IN
87 VIDEO 2 IN
82 B.B. (EF) IN
77 VIDEO 4 IN
67 VIDEO 5 IN
63 VIDEO 6 IN
59 VIDEO 7 IN
55 VIDEO 8 IN
34 B.G. CM IN
40 B.G. WHITE IN
38 B.G. BLACK IN
49 B CONT 2⁰ IN
52 B CONT 2¹ IN
56 B CONT 2² IN
39 B CM CONT 2⁰ IN
37 B CM CONT 2¹ IN
47 C CONT 2⁰ IN
51 C CONT 2¹ IN
53 C CONT 2² IN
43 C CM CONT 2⁰ IN
41 C CM CONT 2¹ IN
46 D CONT 2⁰ IN
48 D CONT 2¹ IN
50 D CONT 2² IN
44 D CM CONT 2⁰ IN
42 D CM CONT 2¹ IN
Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 BUFF
A BUS SIG SELECT
B BUS SIG SELECT
C BUS SIG SELECT
D BUS SIG SELECT
IC2 IC1 IC6 IC5 IC10 IC9 IC13 IC12
Q16, 17 Q10, 11 Q14, 15 Q12, 13
Q34, 35 Q28, 29 Q32, 33 Q30, 31
Q50, 51 Q44, 45 Q48, 49 Q46, 47
Q69, 70 Q63, 64 Q67, 68 Q65, 66
Q18 BUFF
DL1 DELAY (2~20nS)
Q19, 20 BUFF
Q21 AMP
RV1 A BUS LEV
Q22 BUFF
Q23 CLAMP
RV2 DC BAL A/B
Q24 BUFF
TP7
Q36 BUFF
DL2 DELAY (2~20nS)
Q37, 38 BUFF
Q39 AMP
RV8 B BUS LEV
Q27 BUFF
Q26 CLAMP
Q25 BUFF
TP6
IC3
A/B EFFECT AMP
(WIPE, MIX, EXT KEY)
CV2 A BUS HUE
CV1 B BUS HUE
RV3 A/B BAL
TP4
RV4 B BUS GAIN
RV5 A BUS GAIN
RV9 EFF/BORD DC BAL
TP46
IC7 CLAMP CLAMP
TP8
TP58
TP9
RV10 EFF/BORD BAL
TP10
IC8
BORDER KEY AMP
RV11 BORD CM GAIN
RV12 EFF GAIN
TP12
TP5
IC4 CLAMP CLAMP
RV6 A/B EFF CONT DC
RV7 BORDER KEY DC SET
TP11
S1 TM/BORD SEL 1
S2 TM/BORD SEL 2
S1 & S2:For adjustment
Q136 CLAMP
Q135 BUFF
Q131 CLAMP
Q130 BUFF
Q120, 121 D11, 12
PGM/PST BAL
RV47 PGM/PST EFFECT BAL
Q52 BUFF
DL7 DELAY (15nS)
DL3 DELAY (2~20nS)
Q53, 54 BUFF
Q55 AMP
RV13 PGM BUS HUE
CV3 PGM LEV
Q56 BUFF
Q71 BUFF
DL8 DELAY (15nS)
DL4 DELAY (2~20nS)
Q72, 73 BUFF
Q74 AMP
RV14 PST LEV
CV4 PST BUS HUE
Q75 BUFF
Q42, 43
Q57, 58
TP13 TP14
IC11
Q40, 41
Q76, 77
TP17 TP18
IC14
Q127 BUFF
Q61, 62
TP16
Q126 BUFF
Q59, 60
TP15
Q85 BUFF
Q86 CLAMP
Q82 BUFF
Q83 CLAMP
RV15 PGM/PST DC BAL
Q87 BUFF
Q84 BUFF
TP22 PGM
TP21 PST
IC15
PGM/PST AMP
(TAKE, MIX)
RV16 PGM/PST BAL
TP42
RV7 PST (PGM) GAIN
CV5 RV18 CV6
PST (PGM) FREQ. RESP.
PGM GAIN
PGM FREQ. RESP.
TP48
IC16 CLAMP CLAMP
RV19 PGM/DSK DC BAL
TP24
TP23
RV20 PGM/DSK BAL
TP47
RV21 DSK CM GAIN
IC17
PGM DSK K AMP
Q128 BUFF
Q78, 79
TP19
Q129 BUFF
Q80, 81
TP20
Q106 BUFF
Q107 CLAMP
RV31 PST/PGM DC BAL
Q103 BUFF
Q104 CLAMP
Q108 BUFF
Q105 BUFF
TP32 PGM
TP31 PST
IC20
PST/PGM AMP
(TAKE, MIX)
RV46 PST/PGM BAL
TP45
RV32 CV8 RV33 CV9
PGM (PST) GAIN
PGM (PST) FREQ. RESP.
PST GAIN
PST FREQ. RESP.
IC21 CLAMP CLAMP
RV34 PST/DSK DC BAL
TP34
TP33
RV35
TP51
RV36 DSK CM GAIN
IC22
PST DSK K AMP


IC4
CLAMP
A/B EFFECT IN 30
BORDER KEY IN 28
RV6 A/B EFF CONT DC
RV7 BORDER KEY DC SET
TP5
TP7
TP11
TP12
IC3
A/B EFFECT AMP (WIPE, MIX, EXT KEY)
IC7
IC8
BORDER KEY AMP
RV9 EFF/BORD DC BAL
RV10 EFF/BORD BAL
RV11 BORD CM GAIN
RV12 EFF GAIN
Q21 AMP
Q22 BUFF
Q23 CLAMP
Q24 BUFF
RV1 BUS LEV
RV2 DC BAL A/B
CV2 A BUS HUE
CV1 B BUS HUE
RV3 A/B BAL
RV4 B BUS GAIN
RV5 A BUS GAIN
TP4
TP46
TP8
TP9
TP10
TP58
S1 TM/BORD SEL 1
S2 TM/BORD SEL 2
S1 & S2:For adjustment
Q124, 125
TP57
TP54
D25, 26
RV48 BORDER CM KILL
BORD CM IN 26
A+B FADER IN 17
BORDER ON/OFF IN 19
TM FADER IN 27
CLAMP IN 24
CLAMP IN 22
PST DSK CM IN 20
PGM DSK CM IN 76
DSK FADER IN 70
PGM DSK KEY IN 72
VIDEO (IND) OUT 90
B.B. (IND) OUT 94
PGM VIDEO OUT 1 99
PGM VIDEO OUT 2 98
PGM VIDEO OUT 3 100
BLK IN 74
B.B. (EF) IN 82
PST VIDEO OUT 1 15
PST VIDEO OUT 2 13
PST DSK KEY IN 25
TM LIM (U) IN 64
TM LIM (D) IN 68
C EFF CONT IN 86
D EFF CONT IN 81
Q39 AMP
Q27 BUFF
Q26 CLAMP
Q25 BUFF
RV8 B BUS LEV
TP6
Q136 CLAMP
Q135 BUFF
Q131 CLAMP
Q130 BUFF
Q89 PGM DSK KEY
Q88 BUFF
Q90 BUFF
Q91 CLAMP
Q92 BUFF
RV23 PGM DSK KEY DC SET
Q123 BUFF
Q101 BUFF
TP25
Q120, 121 D11, 12 PGM/PST BAL
RV47 PGM/PST EFFECT BAL
IC15 PGM/PST AMP (TAKE, MIX)
IC16 CLAMP
IC17 PGM DSK KEY AMP
IC18 BURST & SYNC REPLACEMENT
IC19 AMP
Q132 DC BIAS
Q133 PHASE COMP
RV49 PGM PHASE SHIFT BIAS
RV29 PGM VIDEO LEV
CV11 PGM VIDEO FREQ RESP.
Q94 CLAMP
Q95 (1/2) BUFF
Q95 (2/2) BUFF
RV25 SET UP
RV26 BAL PGM/B.B
RV27 PGM GAIN
RV28 BURST GAIN (PGM)
RV24 BLKG DC SET (PST)
Q93 BUFF
TP24 TP26 TP27 TP28 TP29 TP30 TP43 TP47 TP48 TP49 TP55
RV19 PGM/DSK DC BAL
RV20 PGM/DSK BAL
RV21 DSK CM GAIN
RV22 PGM GAIN
Q127 BUFF
Q61, 62
Q85 BUFF
Q86 CLAMP
Q87 BUFF
Q82 BUFF
Q83 CLAMP
Q84 BUFF
RV15 PGM/PST DC BAL
Q126 BUFF
Q59, 60
TP13 TP14 TP15 TP16 TP21 TP22 TP42
Q42, 43
IC11
Q57, 58
DL3 DELAY (~20nS)
Q53, 54 BUFF
Q55 AMP
Q56 BUFF
RV13 PGM BUS HUE
CV3 PGM LEV
RV16 PGM/PST BAL
RV7 PST (PGM) GAIN
CV5 PST (PGM) FREQ. RESP.
RV18 PGM GAIN
CV6 PGM FREQ. RESP.
Q100 BUFF
Q134 PHASE ADJ
Q97 BUFF
RV51 BURST PHASE (PGM)
RV50 BURST LEV (PGM)
Q119 BUFF
Q139 PHASE ADJ
Q118 BUFF
RV54 BURST PHASE (PST)
RV53 BURST LEV (PST)
RV39 BLKG DC SET (PST)
Q113 BUFF
TP36 TP37 TP38
Q144 (1/2) BUFF
Q114 (2/2) BUFF
IC23 BURST & SYNC REPLACEMENT
Q137 DC BIAS
Q138 PHASE COMP
IC24 AMP
RV52 PST PHASE SHIFT BIAS
RV44 PST VIDEO LEV
CV12 PST VIDEO FREQ RESP.
TP39 TP40 TP56
RV41 PST/B.B BAL
RV42 PST GAIN
RV43 BURST GAIN (PST)
TPS2
Q112 CLAMP
IC21 CLAMP
IC22 PST DSK KEY AMP
RV34 PST/DSK DC BAL
RV35
RV36 DSK CM GAIN
RV37 PST GAIN
TP33 TP34 TP35 TPS1
Q109 BUFF
Q110 BUFF
Q111 CLAMP
Q112 BUFF
RV38 PST DSK KEY DC SET
Q128 BUFF
Q78, 79
Q106 BUFF
Q107 CLAMP
Q108 BUFF
RV31 PST/PGM DC BAL
Q129 BUFF
Q80, 81
Q103 BUFF
Q104 CLAMP
Q105 BUFF
TP17 TP18 TP19 TP20 TP31 TP32 TP45
IC20 PST/PGM AMP (TAKE, MIX)
RV46 PST/PGM BAL
RV32 PGM (PST) GAIN
CV8 PGM (PST) FREQ. RESP.
RV33 PST GAIN
CV9 PST FREQ. RESP.
Q40, 41
IC14
Q76, 77
DL4 DELAY (~20nS)
Q72, 73 BUFF
Q74 AMP
Q75 BUFF
RV14 PST LEV
CV4 PST BUS HUE
PGM
PST

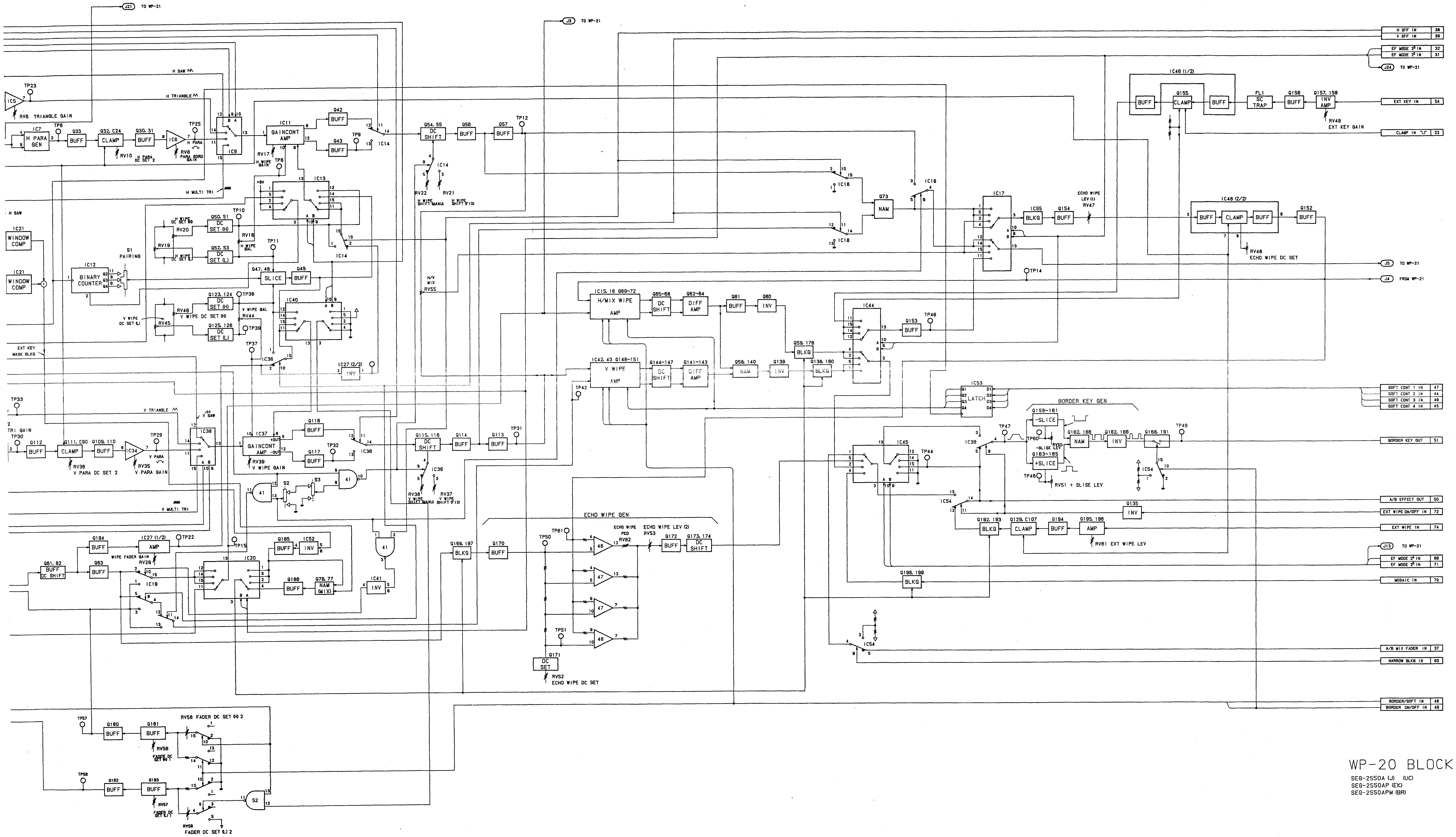
EF-13 BLOCK

SEG-2550 (J) (UC)
SEG-2550P (EK)
SEG-2550PM (BR)
SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

WP-20 BLOCK



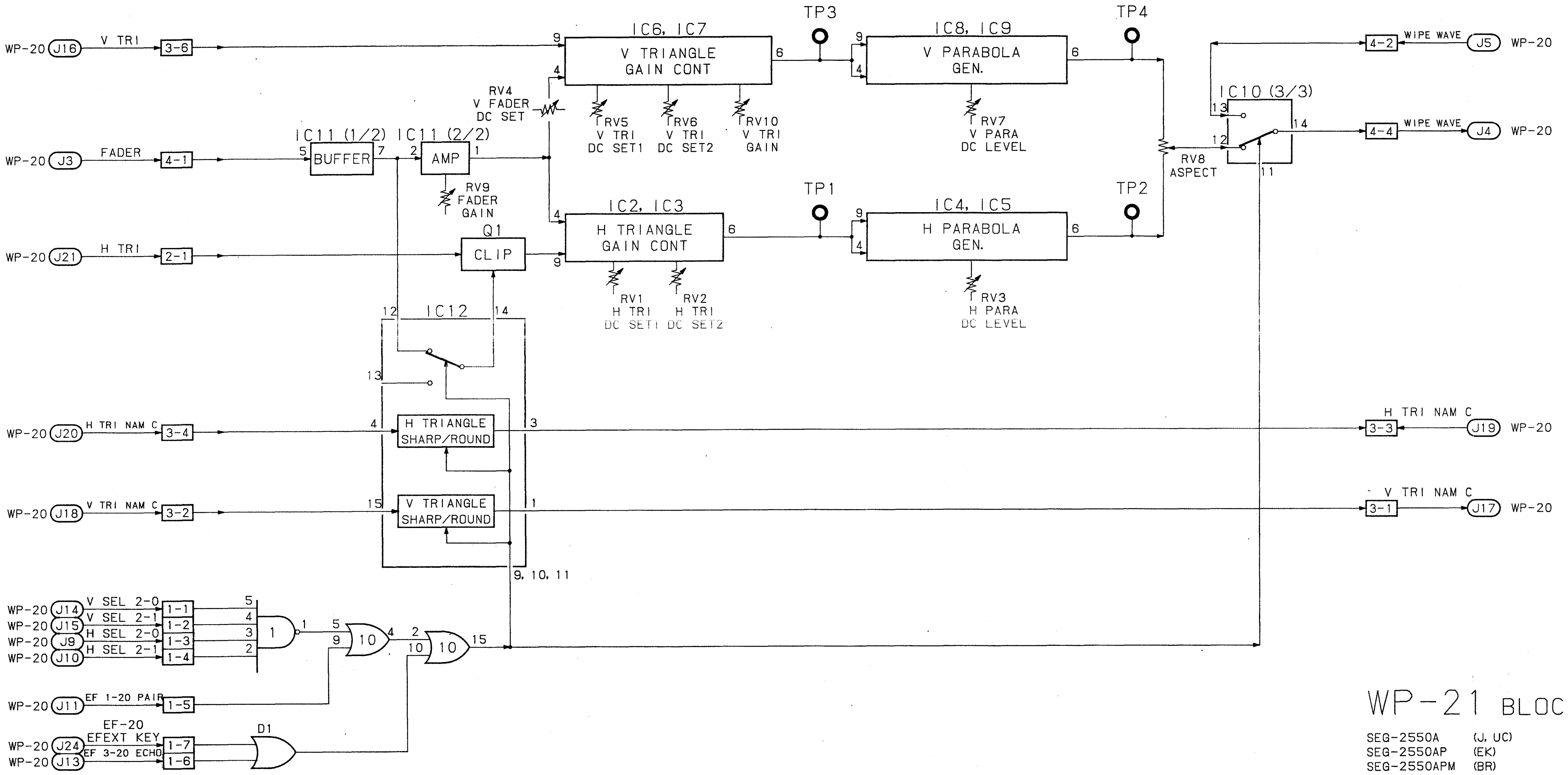
EF MODE 2⁰ IN
EF MODE 2¹ IN
V INV IN
H INV IN
H SELECT 2⁰ IN
H SELECT 2¹ IN
TO WP-21
FROM WP-21
H SAW OUT
HD IN
POSITION H IN
POSITION V IN
POSITION ON/OFF IN
V SAW OUT
VD IN
V SELECT 2⁰ IN
V SELECT 2¹ IN
WP FADER IN
WP FADER (H) OUT
EX FADER IN
EX FADER (H) OUT
EX FADER (L) OUT
PATT SELECT IN
WP FADER (L) OUT
MONO-MULTI
H ALT
V ALT
BUFF
DRIVER
H SAW GEN
H TRIANGLE GEN
H MULTI TRI GEN
V MULTI TRI GEN
VCO
BINARY COUNTER
LPF
AMP
DC SHIFT
BLKG
CLAMP
H PARA GEN
V PARA GEN
V SAW GEN
V TRIANGLE GEN
INV
DC SET
WINDOW COMP
SLICE
GAINCONT AMP
H/MIX WIPE AMP
V WIPE AMP
DIFF AMP
NAM
NAM (MIX)
ECHO WIPE GEN
PAIRING
H SAW GAIN
TRIANGLE GAIN
H TRI DC SET
H PARA DC SET 1
H PARA DC SET 2
H PARA BORD GAIN
H PLS POSI
H MLT TRI GAIN
H MLT TRI DC SET
BLKG WIDTH
H POSITION
V POSITION
H CENT
V CENT
V SAW DC SET
V SAW GAIN
VD PHASE
V TRI DC SET
V TRI GAIN
V PARA DC SET 1
V PARA DC SET 2
V PARA GAIN
V MLT TRI
V MLT TRI DC SET
V MLT TRI GAIN
H WIPE GAIN
H WIPE BAL
H WIPE DC SET (H)
H WIPE DC SET (L)
V WIPE BAL
V WIPE DC SET (H)
V WIPE DC SET (L)
V WIPE GAIN
H WIPE SHIFT (MANU)
H WIPE SHIFT (FIX)
V WIPE SHIFT (MANU)
V WIPE SHIFT (FIX)
H/V MIX
EXT KEY MASK LEV
EXT KEY MASK BLKG
H+EXT KEY
WIPE FADER GAIN
ECHO WIPE PED
ECHO WIPE LEV
ECHO WIPE DC SET
FADER DC SET (H) 2
FADER DC SET (H) 1
FADER DC SET (L) 1
FADER DC SET (L) 2


J21 TO WP-21
J3 TO WP-21
H SAW
H TRIANGLE
TP23
IC5
RV6 TRIANGLE GAIN
IC7 H PARA GEN
TP6
Q33 BUFF
Q32, C24 CLAMP
Q30, 31 BUFF
RV10 H PARA DC SET 2
IC8
RV8 PARA BORD GAIN
TP25
H PARA
IC9
IC11 GAINCONT AMP
RV17 H WIPE GAIN
TP8
Q42 BUFF
Q43 BUFF
TP9
IC14
Q54, 55 DC SHIFT
Q56 BUFF
Q57 BUFF
TP12
RV22 H WIPE SHIFT (MANU)
RV21 H WIPE SHIFT (F IX)
H MULTI TRI
IC13
H SAW
IC21 WINDOW COMP
IC21 WINDOW COMP
IC12 BINARY COUNTER
S1 PAIRING
RV20
RV19
Q50, 51 DC SET (H)
Q52, 53 DC SET (L)
TP10
RV18 H WIPE BAL
TP11
Q47, 48 SLICE
Q49 BUFF
IC40
H/V MIX RV55
RV46 V WIPE DC SET (H)
RV45
V WIPE DC SET (L)
Q123, 124 DC SET (H)
Q125, 126 DC SET (L)
TP38
V WIPE BAL RV44
TP39
TP37
IC36
IC27 (2/2) INV
EXT KEY MASK BLKG
TP33
TRI GAIN
TP30
Q112 BUFF
Q111, C90 CLAMP
Q109, 110 BUFF
IC34
RV36 V PARA DC SET 2
RV35 V PARA GAIN
TP29
V PARA
V TRIANGLE
V SAW
IC38
V MULTI TRI
IC37 GAINCONT AMP
RV39 V WIPE GAIN
Q118 BUFF
Q117 BUFF
TP32
IC38
Q115, 116 DC SHIFT
Q114 BUFF
Q113 BUFF
TP31
IC36
RV38 V WIPE SHIFT (MANU)
RV37 V WIPE SHIFT (F IX)
41
S2
S3
41
41
Q184 BUFF
IC27 (1/2) AMP
TP22
WIPE FADER GAIN RV26
Q81, 82 BUFF DC SHIFT
Q83 BUFF
IC18
TP15
IC20
Q165 BUFF
IC52 INV
Q166 BUFF
Q76, 77 NAM (MIX)
IC41 INV
Q169, 197 BLKG
Q170 BUFF
IC15, 16 Q69-72 H/MIX WIPE AMP
Q65-68 DC SHIFT
Q62-64 DIFF AMP
Q61 BUFF
Q60 INV
IC42, 43 Q148-151 V WIPE AMP
Q144-147 DC SHIFT
Q141-143 DIFF AMP
Q58, 140 NAM
Q139 INV
Q59, 178 BLKG
Q138, 190 BLKG
TP42
IC18
IC18
Q73 NAM
IC18
IC17
IC55 BLKG
Q154 BUFF
ECHO WIPE LEV (1) RV47
IC44
Q153 BUFF
TP46
TP14
IC46 (1/2)
BUFF
Q155 CLAMP
BUFF
FL1 SC TRAP
Q156 BUFF
Q157, 158 INV AMP
RV49 EXT KEY GAIN
IC46 (2/2)
BUFF
CLAMP
BUFF
Q152 BUFF
RV48 ECHO WIPE DC SET
IC53 LATCH
BORDER KEY GEN
Q159-161 -SLICE
Q163-165 +SLICE
TP47
TP60
RV50 -SLISE LEV
TP48
RV51 + SLISE LEV
Q162, 166 NAM
Q162, 168 INV
Q168, 191
TP49
IC54
IC39
IC45
TP44
IC54
Q135 INV
Q192, 193 BLKG
Q129, C107 CLAMP
Q194 BUFF
Q195, 196 AMP
RV61 EXT WIPE LEV
Q198, 199 BLKG
IC54
ECHO WIPE GEN
TP61
TP50
ECHO WIPE PED RV62
ECHO WIPE LEV (2) RV53
Q172 BUFF
Q173, 174 DC SHIFT
48
47
47
48
TP51
Q171 DC SET
RV52 ECHO WIPE DC SET
TP57
Q180 BUFF
Q181 BUFF
RV58 FADER DC SET (H) 2
RV56 FADER DC SET (H) 1
TP58
Q182 BUFF
Q183 BUFF
RV57 FADER DC SET (L) 1
RV59 FADER DC SET (L) 2
52
H OFF IN 38
V OFF IN 39
EF MODE 2³ IN 32
EF MODE 2² IN 31
J24 TO WP-21
EXT KEY IN 54
CLAMP IN 22
J5 TO WP-21
J4 FROM WP-21
SOFT CONT 1 IN 47
SOFT CONT 2 IN 44
SOFT CONT 3 IN 46
SOFT CONT 4 IN 45
BORDER KEY OUT 51
A/B EFFECT OUT 50
EXT WIPE ON/OFF IN 72
EXT WIPE IN 74
J13 TO WP-21
EF MODE 2⁴ IN 69
EF MODE 2⁵ IN 71
MOSAIC IN 70
A/B MIX FADER IN 37
NARROW BLKG IN 93
BORDER/SOFT IN 48
BORDER ON/OFF IN 49

WP-20 BLOCK

SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

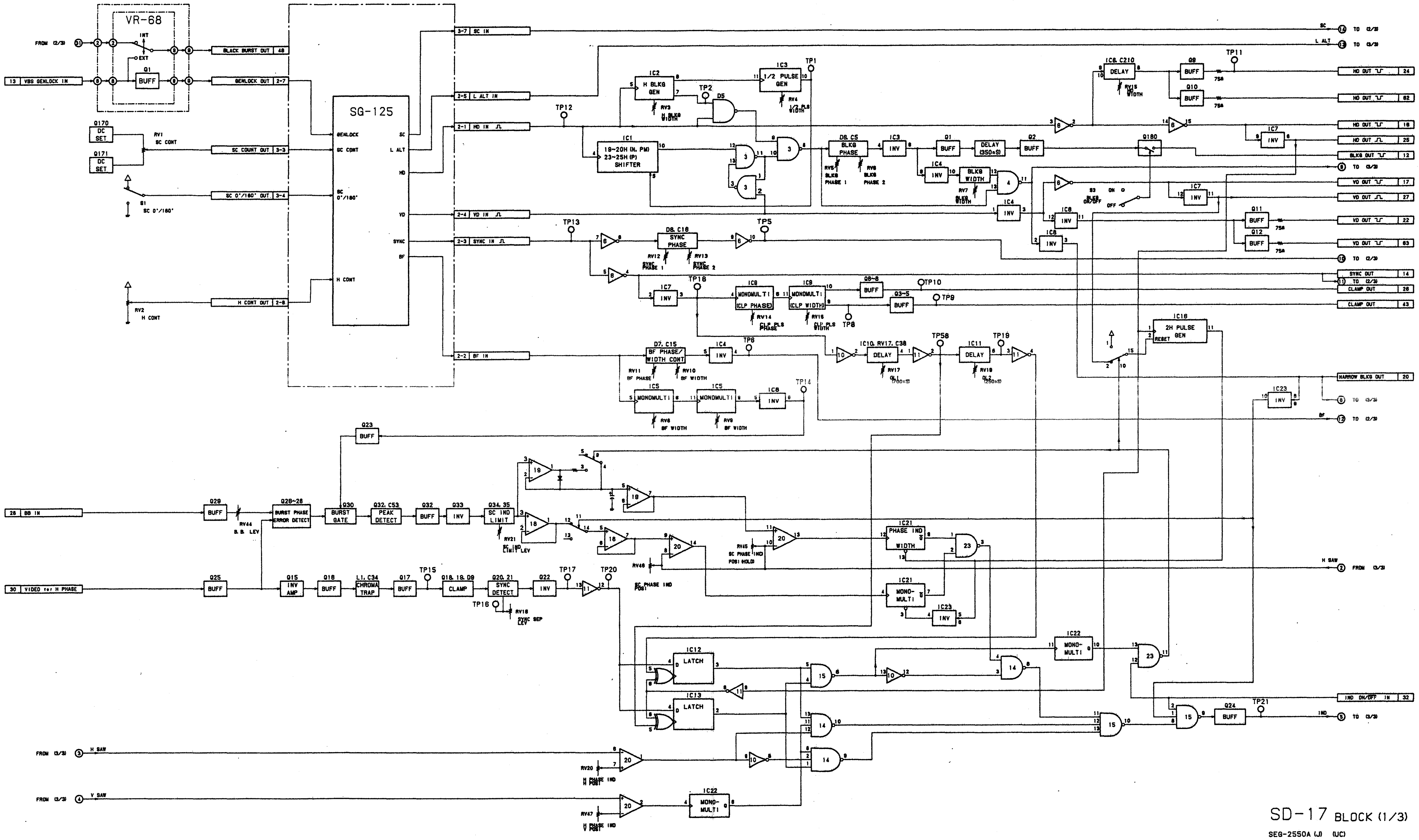
WP-21 BLOCK


WP-20 J16
V TRI
3-6
WP-20 J3
FADER
4-1
WP-20 J21
H TRI
2-1
WP-20 J20
H TRI NAM C
3-4
WP-20 J18
V TRI NAM C
3-2
WP-20 J14
WP-20 J15
WP-20 J9
WP-20 J10
V SEL 2-0
V SEL 2-1
H SEL 2-0
H SEL 2-1
1-1
1-2
1-3
1-4
WP-20 J11
EF 1-20 PAIR
1-5
WP-20 J24
WP-20 J13
EF-20
EFEXT KEY
EF 3-20 ECHO
1-7
1-6
D1
IC11 (1/2)
BUFFER
IC11 (2/2)
AMP
RV9
FADER
GAIN
RV4
V FADER
DC SET
Q1
CLIP
IC12
H TRIANGLE
SHARP/ROUND
V TRIANGLE
SHARP/ROUND
9, 10, 11
IC6, IC7
V TRIANGLE
GAIN CONT
RV5
V TRI
DC SET1
RV6
V TRI
DC SET2
RV10
V TRI
GAIN
IC2, IC3
H TRIANGLE
GAIN CONT
RV1
H TRI
DC SET1
RV2
H TRI
DC SET2
TP3
TP1
IC8, IC9
V PARABOLA
GEN.
RV7
V PARA
DC LEVEL
IC4, IC5
H PARABOLA
GEN.
RV3
H PARA
DC LEVEL
TP4
TP2
RV8
ASPECT
IC10 (3/3)
4-2
WIPE WAVE
J5
WP-20
4-4
WIPE WAVE
J4
WP-20
H TRI NAM C
3-3
J19
WP-20
V TRI NAM C
3-1
J17
WP-20

WP-21 BLOCK

SEG-2550A	(J, UC)
SEG-2550AP	(EK)
SEG-2550APM	(BR)

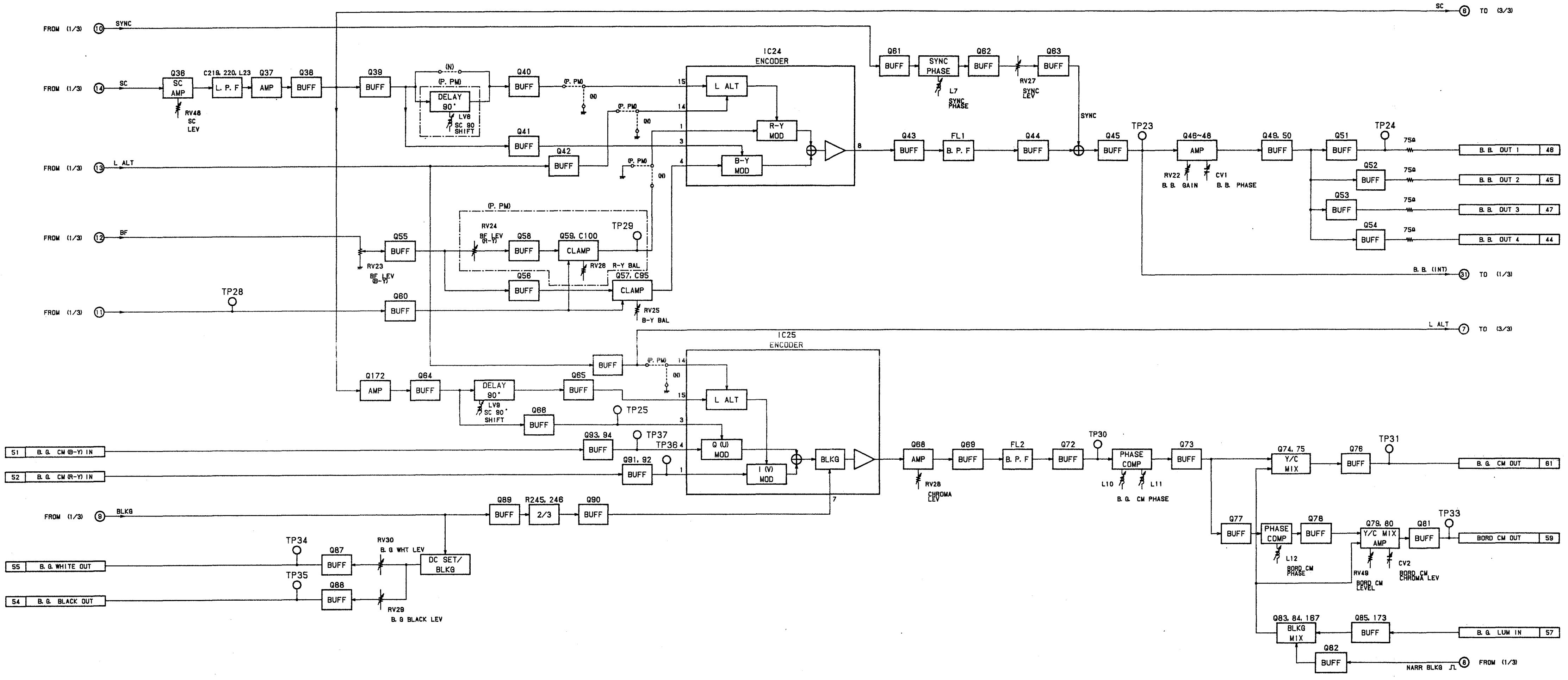
SD-17 (1/3) BLOCK


VR-68
INT
EXT
Q1
BUFF
FROM (2/3)
13 VBS GENLOCK IN
BLACK BURST OUT 48
GENLOCK OUT 2-7
Q170
DC SET
Q171
DC SET
RV1
SC CONT
SC COUNT OUT 3-3
S1
SC 0°/180°
SC 0°/180° OUT 3-4
RV2
H CONT
H CONT OUT 2-8
SG-125
GENLOCK
SC CONT
SC 0°/180°
H CONT
SC
L ALT
HD
VD
SYNC
BF
3-7 SC IN
2-5 L ALT IN
2-1 HD IN
2-4 VD IN
2-3 SYNC IN
2-2 BF IN
TP12
TP13
IC1
19-20H (L PM) 23-25H (P) SHIFTER
IC2
H BLKG GEN
RV3
H BLKG WIDTH
TP2
D5
IC3
1/2 PULSE GEN
RV4
1/2 PLS WIDTH
TP1
D6, C5
BLKG PHASE
RV5
BLKG PHASE 1
RV6
BLKG PHASE 2
IC3
INV
Q1
BUFF
DELAY (350nS)
Q2
BUFF
IC4
INV
BLKG WIDTH
RV7
BLKG WIDTH
IC4
INV
IC6, C210
DELAY
RV15
HD WIDTH
Q9
BUFF
Q10
BUFF
TP11
Q180
IC7
INV
S3
ON
OFF
BLKG ON/OFF
IC7
INV
IC8
INV
IC8
INV
Q11
BUFF
Q12
BUFF
75Ω
HD OUT 24
HD OUT 62
HD OUT 18
HD OUT 25
BLKG OUT 12
TO (2/3)
VD OUT 17
VD OUT 27
VD OUT 22
VD OUT 63
SC
L ALT
TO (2/3)
TO (3/3)
D8, C18
SYNC PHASE
RV12
SYNC PHASE 1
RV13
SYNC PHASE 2
TP5
TP18
IC7
INV
IC8
MONOMULTI
CLP PHASE
RV14
CLP PLS PHASE
IC9
MONOMULTI
CLP WIDTH
RV15
CLP PLS WIDTH
TP8
Q8-8
BUFF
Q3-5
BUFF
TP10
TP9
SYNC OUT 14
TO (2/3)
CLAMP OUT 26
CLAMP OUT 43
D7, C15
BF PHASE/WIDTH CONT
RV11
BF PHASE
RV10
BF WIDTH
IC4
INV
TP6
IC5
MONOMULTI
RV8
BF WIDTH
IC5
MONOMULTI
RV9
BF WIDTH
IC6
INV
TP14
IC10, RV17, C38
DELAY
TP58
IC11
DELAY
TP19
IC16
2H PULSE GEN
RESET
NARROW BLKG OUT 20
IC23
INV
TO (3/3)
BF
TO (2/3)
Q23
BUFF
28 BB IN
Q29
BUFF
RV44
B.B. LEV
Q26-28
BURST PHASE ERROR DETECT
Q30
BURST GATE
Q32, C53
PEAK DETECT
Q32
BUFF
Q33
INV
Q34, 35
SC IND LIMIT
RV21
SC IND LIMIT LEV
30 VIDEO for H PHASE
Q25
BUFF
Q15
INV AMP
Q16
BUFF
L1, C34
CHROMA TRAP
Q17
BUFF
TP15
Q18, 19, D9
CLAMP
Q20, 21
SYNC DETECT
TP16
RV16
SYNC SEP LEV
Q22
INV
TP17
TP20
RV45
SC PHASE IND POSI HOLD
RV46
SC PHASE IND POSI
IC21
PHASE IND WIDTH
IC21
MONO-MULTI
IC23
INV
H SAW
FROM (3/3)
IC22
MONO-MULTI
IC12
LATCH
IC13
LATCH
Q24
BUFF
TP21
IND ON/OFF IN 32
IND
TO (3/3)
FROM (3/3) H SAW
RV20
H PHASE IND POSI
FROM (3/3) V SAW
RV47
V PHASE IND POSI
IC22
MONO-MULTI

SD-17 BLOCK (1/3)

SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

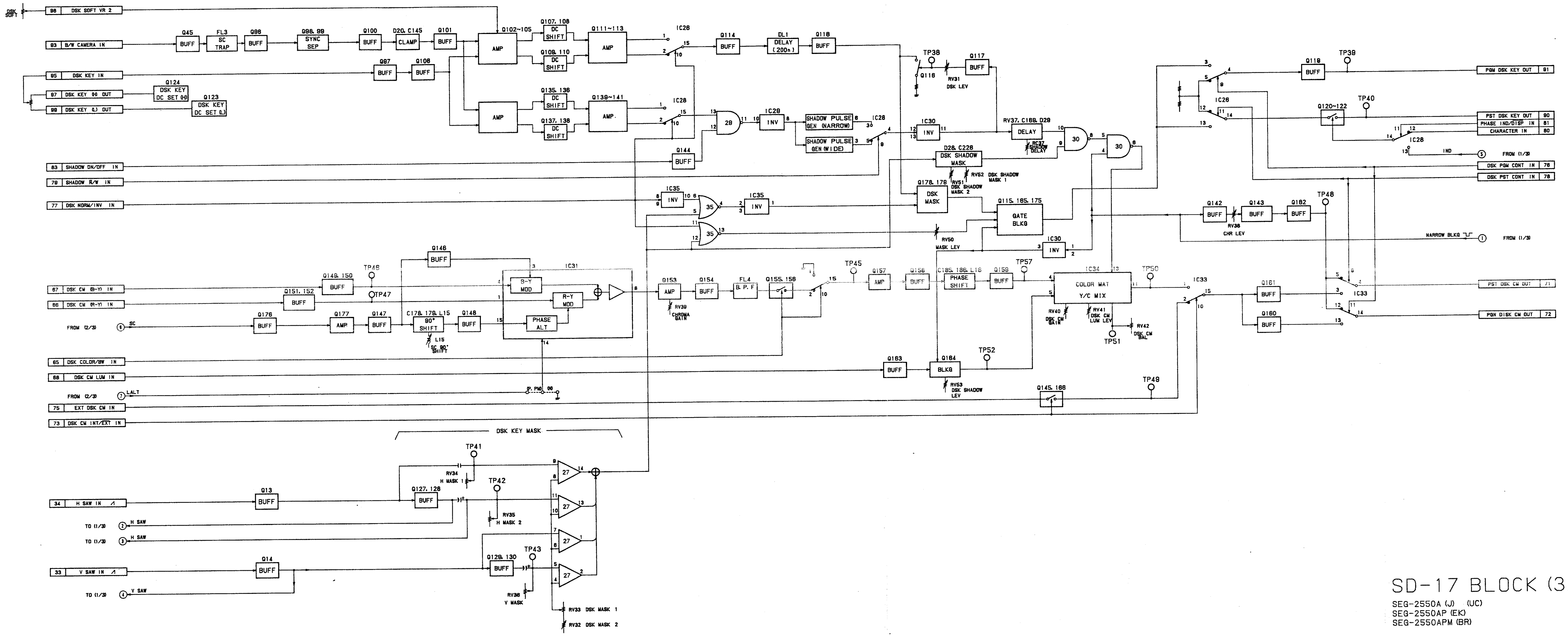
SD-17 (2/3) BLOCK


FROM (1/3) ⑩ SYNC
FROM (1/3) ⑭ SC
Q36 SC AMP
RV48 SC LEV
C219, 220, L23 L. P. F
Q37 AMP
Q38 BUFF
Q39 BUFF
(N)
(P. PM)
DELAY 90°
LV8 SC 90 SHIFT
Q40 BUFF
Q41 BUFF
Q42 BUFF
FROM (1/3) ⑬ L ALT
FROM (1/3) ⑫ BF
Q55 BUFF
RV23 BF LEV (B-Y)
(P. PM)
RV24 BF LEV (R-Y)
Q58 BUFF
Q59, C100 CLAMP
TP29
RV26 R-Y BAL
Q56 BUFF
Q57, C95 CLAMP
RV25 B-Y BAL
FROM (1/3) ⑪
TP28
Q60 BUFF
IC24 ENCODER
15 14 1 3 4 8
L ALT
R-Y MOD
B-Y MOD
Q61 BUFF
SYNC PHASE
L7 SYNC PHASE
Q62 BUFF
RV27 SYNC LEV
Q63 BUFF
SYNC
Q43 BUFF
FL1 B. P. F
Q44 BUFF
Q45 BUFF
TP23
Q46~48 AMP
RV22 B. B. GAIN
CV1 B. B. PHASE
Q49, 50 BUFF
Q51 BUFF
TP24
Q52 BUFF
Q53 BUFF
Q54 BUFF
75Ω
B. B. OUT 1 | 46
B. B. OUT 2 | 45
B. B. OUT 3 | 47
B. B. OUT 4 | 44
SC ⑥ TO (3/3)
B. B. (INT) ㉛ TO (1/3)
L ALT ⑦ TO (3/3)
IC25 ENCODER
14 15 3 4 1 7
BUFF
Q172 AMP
Q64 BUFF
DELAY 90°
LV9 SC 90° SHIFT
Q65 BUFF
Q66 BUFF
TP25
L ALT
Q93, 94 BUFF
TP37
TP36
Q (U) MOD
Q91, 92 BUFF
I (V) MOD
BLKG
51 | B. G. CM (B-Y) IN
52 | B. G. CM (R-Y) IN
FROM (1/3) ⑨ BLKG
Q89 BUFF
R245, 246 2/3
Q90 BUFF
TP34
Q87 BUFF
RV30 B. G WHT LEV
DC SET/ BLKG
55 | B. G. WHITE OUT
TP35
Q88 BUFF
RV29 B. G BLACK LEV
54 | B. G. BLACK OUT
Q68 AMP
RV28 CHROMA LEV
Q69 BUFF
FL2 B. P. F
Q72 BUFF
TP30
PHASE COMP
L10 L11 B. G. CM PHASE
Q73 BUFF
Q74, 75 Y/C MIX
Q76 BUFF
TP31
B. G. CM OUT | 61
Q77 BUFF
PHASE COMP
L12 BORD CM PHASE
Q78 BUFF
Q79, 80 Y/C MIX AMP
RV49 BORD CM LEVEL
CV2 BORD CM CHROMA LEV
Q81 BUFF
TP33
BORD CM OUT | 59
Q83, 84, 167 BLKG MIX
Q85, 173 BUFF
B. G. LUM IN | 57
Q82 BUFF
NARR BLKG ⑧ FROM (1/3)

SD-17 BLOCK (2/3)

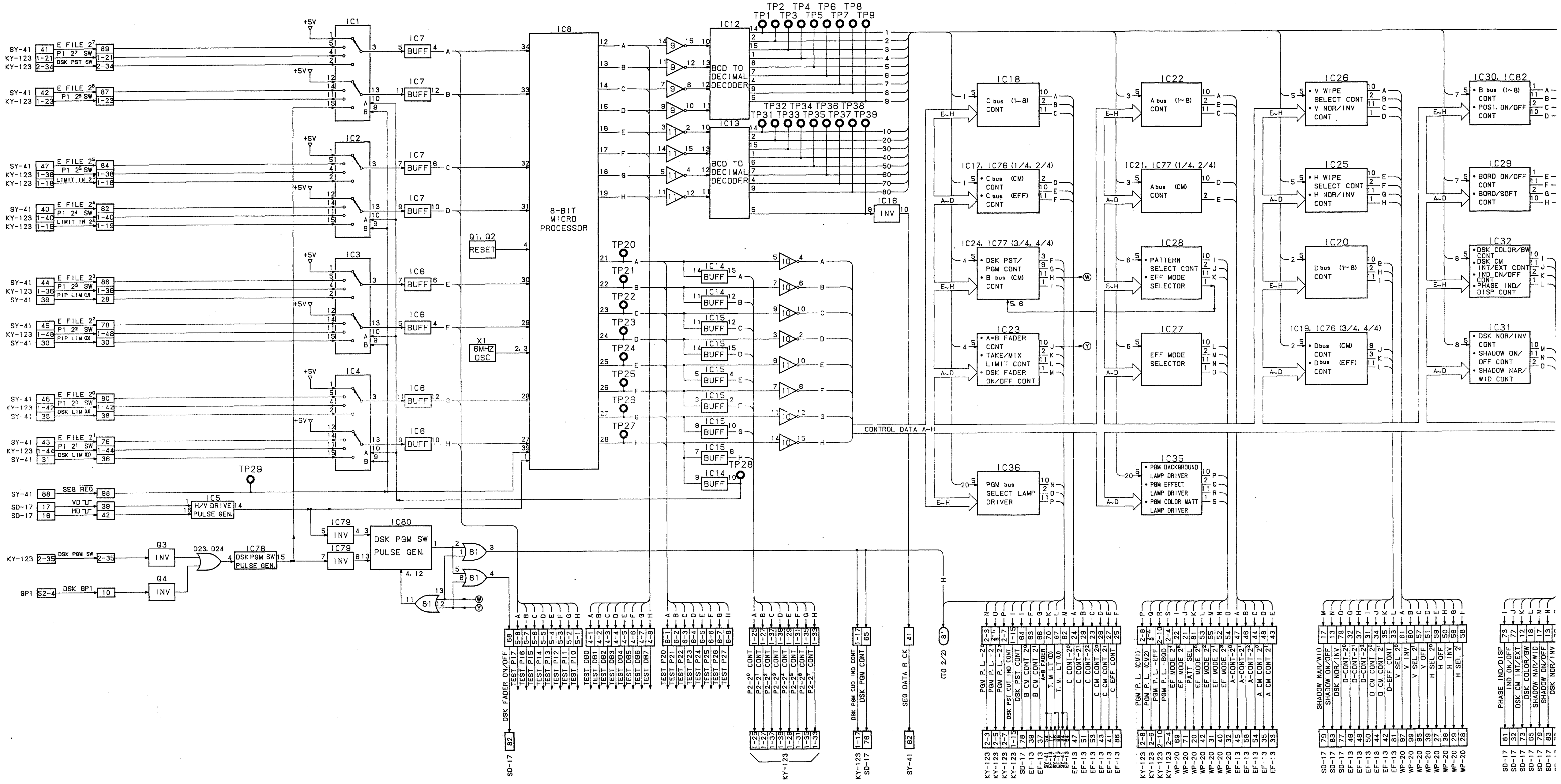
SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

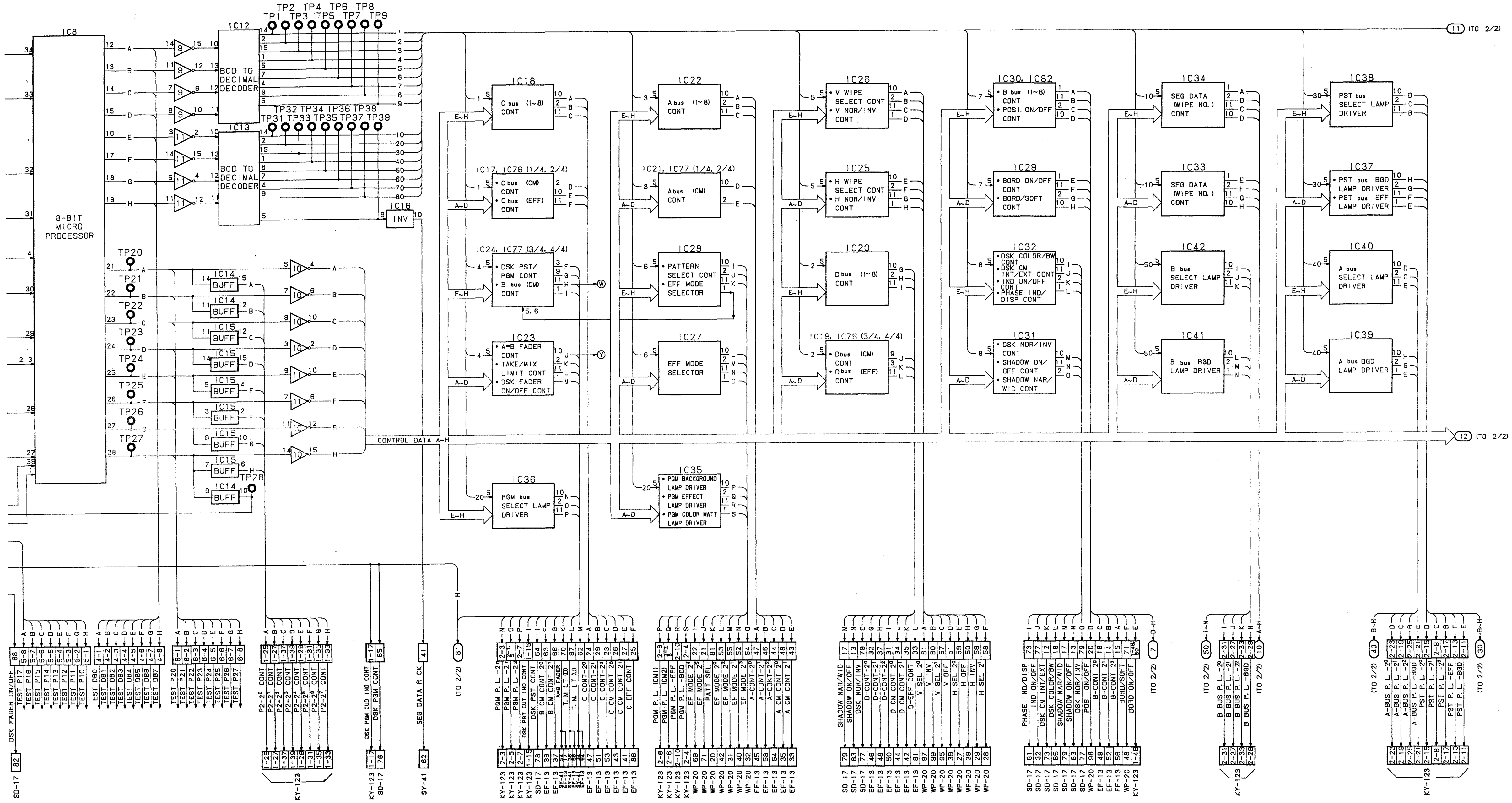
SD-17 (3/3) BLOCK


DSK SOFT
98 DSK SOFT VR 2
93 B/W CAMERA IN
95 DSK KEY IN
97 DSK KEY (H) OUT
99 DSK KEY (L) OUT
83 SHADOW ON/OFF IN
79 SHADOW N/W IN
77 DSK NORM/INV IN
67 DSK CM (B-Y) IN
66 DSK CM (R-Y) IN
FROM (2/3) 6 SC
65 DSK COLOR/BW IN
68 DSK CM LUM IN
FROM (2/3) 7 LALT
75 EXT DSK CM IN
73 DSK CM INT/EXT IN
Q45 BUFF
FL3 SC TRAP
Q96 BUFF
Q98, 99 SYNC SEP
Q100 BUFF
D20, C145 CLAMP
Q101 BUFF
Q97 BUFF
Q106 BUFF
Q124 DSK KEY DC SET (H)
Q123 DSK KEY DC SET (L)
Q102~105 AMP
AMP
Q107, 108 DC SHIFT
Q109, 110 DC SHIFT
Q111~113 AMP
Q135, 136 DC SHIFT
Q137, 138 DC SHIFT
Q139~141 AMP.
IC26
IC28
28
Q144 BUFF
IC29 INV
SHADOW PULSE GEN (NARROW)
SHADOW PULSE GEN (WIDE)
Q114 BUFF
DL1 DELAY (200n)
Q118 BUFF
TP38
Q116
RV31 DSK LEV
Q117 BUFF
IC30 INV
RV37, C169, D29 DELAY
RC37 SHADOW DELAY
30
30
D28, C226 DSK SHADOW MASK
RV52 DSK SHADOW MASK 1
RV51 DSK SHADOW MASK 2
Q178, 179 DSK MASK
Q115, 165, 175 GATE BLKG
RV50 MASK LEV
IC35 INV
35
35
IC35 INV
IC30 INV
Q119 BUFF
TP39
PGM DSK KEY OUT 91
Q120~122
TP40
PST DSK KEY OUT 90
PHASE IND/DISP IN 81
CHARACTER IN 80
IND
FROM (1/3) 5
DSK PGM CONT IN 76
DSK PST CONT IN 78
Q142 BUFF
RV38 CHR LEV
Q143 BUFF
Q182 BUFF
TP48
NARROW BLKG
FROM (1/3) 1
Q146 BUFF
Q149, 150 BUFF
TP46
TP47
Q151, 152 BUFF
Q176 BUFF
Q177 AMP
Q147 BUFF
C178, 179, L15 90° SHIFT
L15 SC 90° SHIFT
Q148 BUFF
IC31
B-Y MOD
R-Y MOD
PHASE ALT
(P. PM) (N)
Q153 AMP
RV39 CHROMA GAIN
Q154 BUFF
FL4 B. P. F
Q155, 156
TP45
Q157 AMP
Q158 BUFF
C185, 186, L16 PHASE SHIFT
Q159 BUFF
TP57
IC34 COLOR MAT Y/C MIX
RV40 DSK CM GAIN
RV41 DSK CM LUM LEV
RV42 DSK CM BAL
TP51
TP50
IC33
Q161 BUFF
Q160 BUFF
IC33
PST DSK CM OUT 71
PGM DISK CM OUT 72
Q163 BUFF
Q164 BLKG
RV53 DSK SHADOW LEV
TP52
Q145, 166
TP49
DSK KEY MASK
TP41
RV34 H MASK 1
TP42
RV35 H MASK 2
34 H SAW IN
Q13 BUFF
Q127, 128 BUFF
TO (1/3) 2 H SAW
TO (1/3) 3 H SAW
33 V SAW IN
Q14 BUFF
TO (1/3) 4 V SAW
Q129, 130 BUFF
TP43
RV36 V MASK
27
27
27
27
RV33 DSK MASK 1
RV32 DSK MASK 2

SD-17 BLOCK (3/3)
SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

SY-118 (1/2) BLOCK
SY-118A (1/2) BLOCK

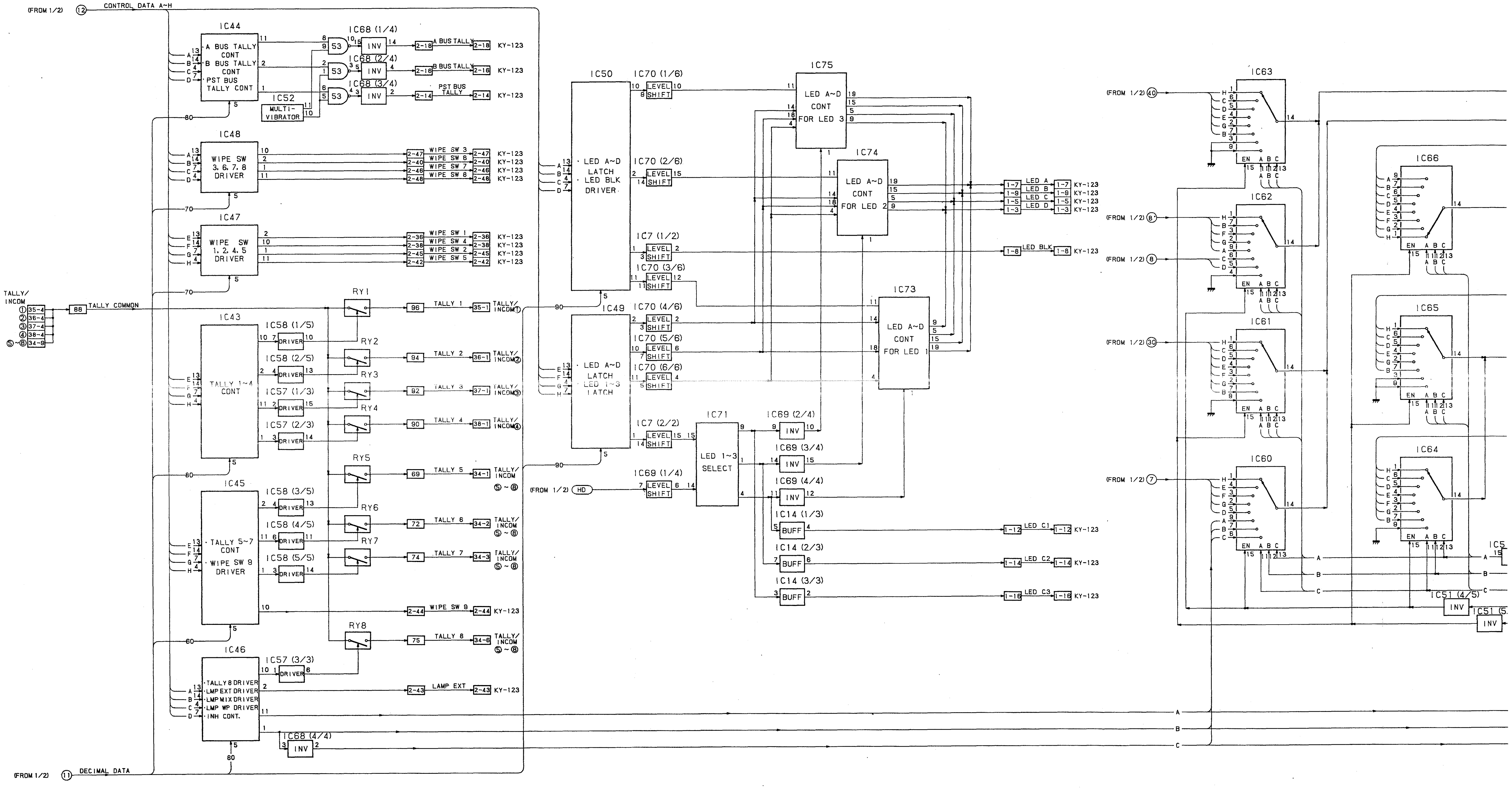

IC1
IC2
IC3
IC4
IC7 BUFF
IC6 BUFF
IC8
8-BIT MICRO PROCESSOR
Q1, Q2 RESET
X1 6MHZ OSC
IC12 BCD TO DECIMAL DECODER
IC13 BCD TO DECIMAL DECODER
IC16 INV
IC14 BUFF
IC15 BUFF
TP1 TP2 TP3 TP4 TP5 TP6 TP7 TP8 TP9
TP31 TP32 TP33 TP34 TP35 TP36 TP37 TP38 TP39
TP20
TP21
TP22
TP23
TP24
TP25
TP26
TP27
TP28
TP29
IC5 H/V DRIVE PULSE GEN.
Q3 INV
Q4 INV
D23, D24
IC78 DSK PGM SW PULSE GEN.
IC79 INV
IC80 DSK PGM SW PULSE GEN.
IC81
E FILE
P1 SW
DSK PST SW
LIMIT IN
PIP LIM
DSK LIM
SEG REG
VD
HD
DSK PGM SW
DSK GP1
SY-41
KY-123
SD-17
GP1
+5V
CONTROL DATA A~H
IC18 C bus (1~8) CONT
IC17, IC76 (1/4, 2/4) • C bus (CM) CONT • C bus (EFF) CONT
IC24, IC77 (3/4, 4/4) • DSK PST/PGM CONT • B bus (CM) CONT
IC23 • A-B FADER CONT • TAKE/MIX LIMIT CONT • DSK FADER ON/OFF CONT
IC36 PGM bus SELECT LAMP DRIVER
IC22 A bus (1~8) CONT
IC21, IC77 (1/4, 2/4) A bus (CM) CONT
IC28 • PATTERN SELECT CONT • EFF MODE SELECTOR
IC27 EFF MODE SELECTOR
IC35 • PGM BACKGROUND LAMP DRIVER • PGM EFFECT LAMP DRIVER • PGM COLOR MATT LAMP DRIVER
IC26 • V WIPE SELECT CONT • V NOR/INV CONT
IC25 • H WIPE SELECT CONT • H NOR/INV CONT
IC20 D bus (1~8) CONT
IC19, IC76 (3/4, 4/4) • D bus (CM) CONT • D bus (EFF) CONT
IC30, IC82 • B bus (1~8) CONT • POSI. ON/OFF CONT
IC29 • BORD ON/OFF CONT • BORD/SOFT CONT
IC32 • DSK COLOR/BW CONT • DSK CM INT/EXT CONT • IND ON/OFF CONT • PHASE IND/DISP CONT
IC31 • DSK NOR/INV CONT • SHADOW ON/OFF CONT • SHADOW NAR/WID CONT
E~H
A~D
DSK FADER ON/OFF
TEST P10 ~ TEST P17
TEST DB0 ~ TEST DB7
TEST P20 ~ TEST P27
P2-2⁰ CONT ~ P2-2⁷ CONT
DSK PGM CUD IND CONT
DSK PGM CONT
SEG DATA R CK
(TO 2/2)
SY-41
KY-123
SD-17
EF-13
WP-20

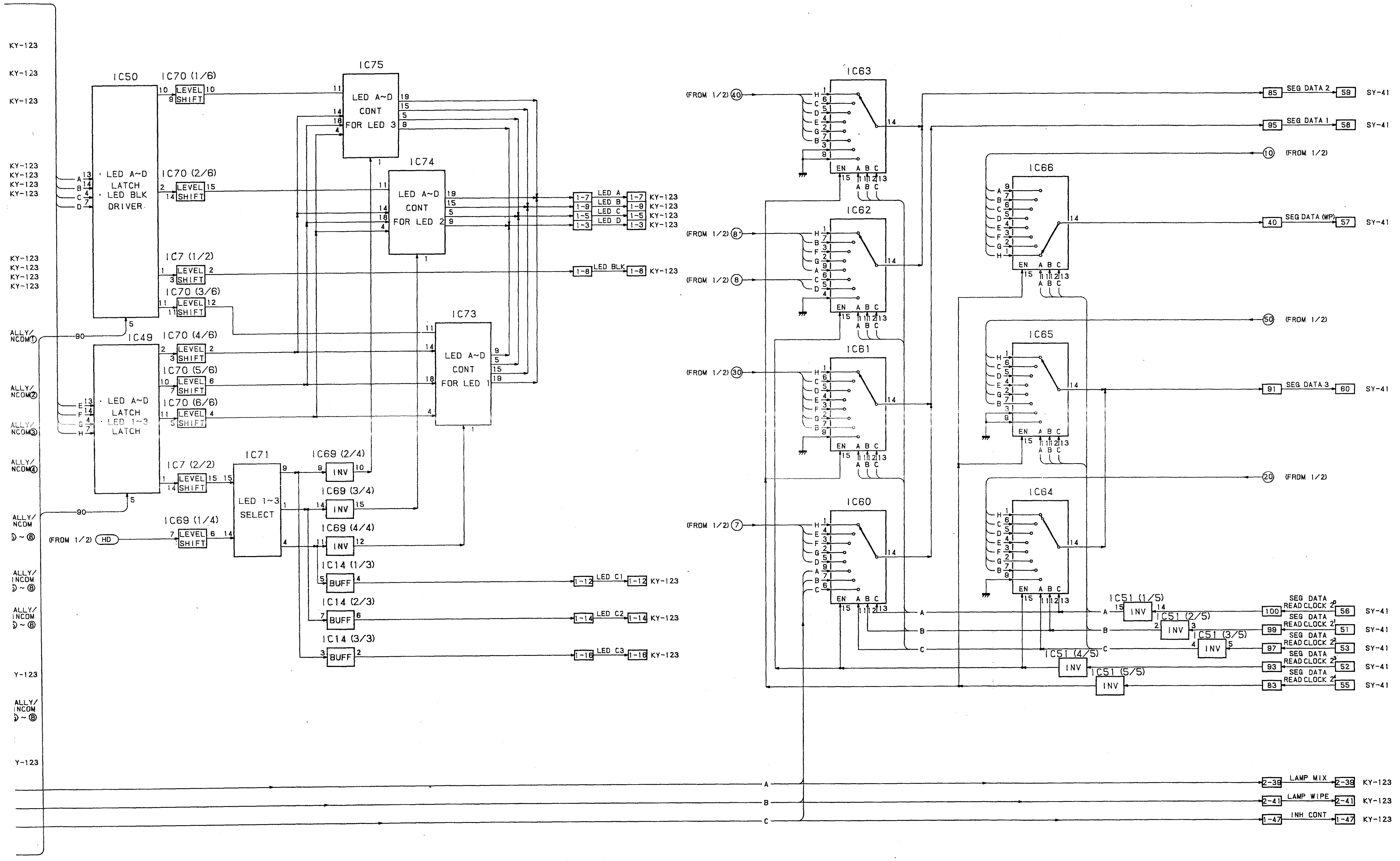

IC8
8-BIT MICRO PROCESSOR
IC12
BCD TO DECIMAL DECODER
IC13
BCD TO DECIMAL DECODER
TP2 TP4 TP6 TP8
TP1 TP3 TP5 TP7 TP9
TP32 TP34 TP36 TP38
TP31 TP33 TP35 TP37 TP39
IC16
INV
TP20
TP21
TP22
TP23
TP24
TP25
TP26
TP27
TP28
IC14
BUFF
IC15
BUFF
CONTROL DATA A~H
11 (TO 2/2)
12 (TO 2/2)
IC18
C bus (1~8) CONT
IC17, IC78 (1/4, 2/4)
• C bus (CM) CONT
• C bus (EFF) CONT
IC24, IC77 (3/4, 4/4)
• DSK PST/PGM CONT
• B bus (CM) CONT
IC23
• A-B FADER CONT
• TAKE/MIX LIMIT CONT
• DSK FADER ON/OFF CONT
IC36
PGM bus SELECT LAMP DRIVER
IC22
A bus (1~8) CONT
IC21, IC77 (1/4, 2/4)
A bus (CM) CONT
IC28
• PATTERN SELECT CONT
• EFF MODE SELECTOR
IC27
EFF MODE SELECTOR
IC35
• PGM BACKGROUND LAMP DRIVER
• PGM EFFECT LAMP DRIVER
• PGM COLOR MATT LAMP DRIVER
IC26
• V WIPE SELECT CONT
• V NOR/INV CONT
IC25
• H WIPE SELECT CONT
• H NOR/INV CONT
IC20
D bus (1~8) CONT
IC19, IC76 (3/4, 4/4)
• D bus (CM) CONT
• D bus (EFF) CONT
IC30, IC82
• B bus (1~8) CONT
• POSI. ON/OFF CONT
IC29
• BORD ON/OFF CONT
• BORD/SOFT CONT
IC32
• DSK COLOR/BW CONT
• DSK CM INT/EXT CONT
• IND ON/OFF CONT
• PHASE IND/DISP CONT
IC31
• DSK NOR/INV CONT
• SHADOW ON/OFF CONT
• SHADOW NAR/WID CONT
IC34
SEG DATA (WIPE NO.) CONT
IC33
SEG DATA (WIPE NO.) CONT
IC42
B bus SELECT LAMP DRIVER
IC41
B bus BGD LAMP DRIVER
IC38
PST bus SELECT LAMP DRIVER
IC37
• PST bus BGD LAMP DRIVER
• PST bus EFF LAMP DRIVER
IC40
A bus SELECT LAMP DRIVER
IC39
A bus BGD LAMP DRIVER
E~H
A~D
DSK FADER ON/OFF
TEST P17
TEST P16
TEST P15
TEST P14
TEST P13
TEST P12
TEST P11
TEST P10
TEST DB0
TEST DB1
TEST DB2
TEST DB3
TEST DB4
TEST DB5
TEST DB6
TEST DB7
TEST P20
TEST P21
TEST P22
TEST P23
TEST P24
TEST P25
TEST P26
TEST P27
P2-2⁰ CONT
P2-2¹ CONT
P2-2² CONT
P2-2³ CONT
P2-2⁴ CONT
P2-2⁵ CONT
P2-2⁶ CONT
P2-2⁷ CONT
DSK PGM CUD IND CONT
DSK PGM CONT
SEG DATA R CK
(TO 2/2)
PGM P.L.-2
PGM P.L.-2
PGM P.L.-2
DSK PST CUT IND CONT
DSK PST CONT
B CM CONT
B CM CONT
A-B FADER
T. M. LT (U)
T. M. LT (L)
C CONT
C CONT
C CONT
C CM CONT
C CM CONT
C EFF CONT
PGM P.L. (CM1)
PGM P.L. (CM2)
PGM P.L.-EFF
PGM P.L.-BGD
EF MODE
EF MODE
PATT SEL
EF MODE
EF MODE
EF MODE
A-CONT
A-CONT
A-CONT
A CM CONT
A CM CONT 2
SHADOW NAR/WID
SHADOW ON/OFF
DSK NOR/INV
D-CONT
D-CONT
D-CONT
D-CONT
D CM CONT
D CM CONT
D-EFF CONT
V SEL
V INV
V SEL 2
V OFF
H SEL
H OFF
H INV
H SEL 2
PHASE IND/DISP
IND ON/OFF
DSK CM INT/EXT
DSK COLOR/BW
SHADOW NAR/WID
SHADOW ON/OFF
DSK NOR/INV
POSI ON/OFF
B-CONT
B-CONT
B-CONT
BORD/SOFT
BORD ON/OFF
B BUS P.L.-2
B BUS P.L.-2
B BUS P.L.-2
B BUS P.L.-BGD
A-BUS P.L.-2
A-BUS P.L.-2
A-BUS P.L.-2
A-BUS P.L.-BGD
PST P.L.-2
PST P.L.-EFF
PST P.L.-BGD
SD-17
KY-123
SY-41
EF-13
WP-20

SY-118 (1/2) BLOCK
SY-118A (1/2) BLOCK

SEG-2550A (UC, J)
SEG-2550AP (EK)
SEG-2550APM (BR)

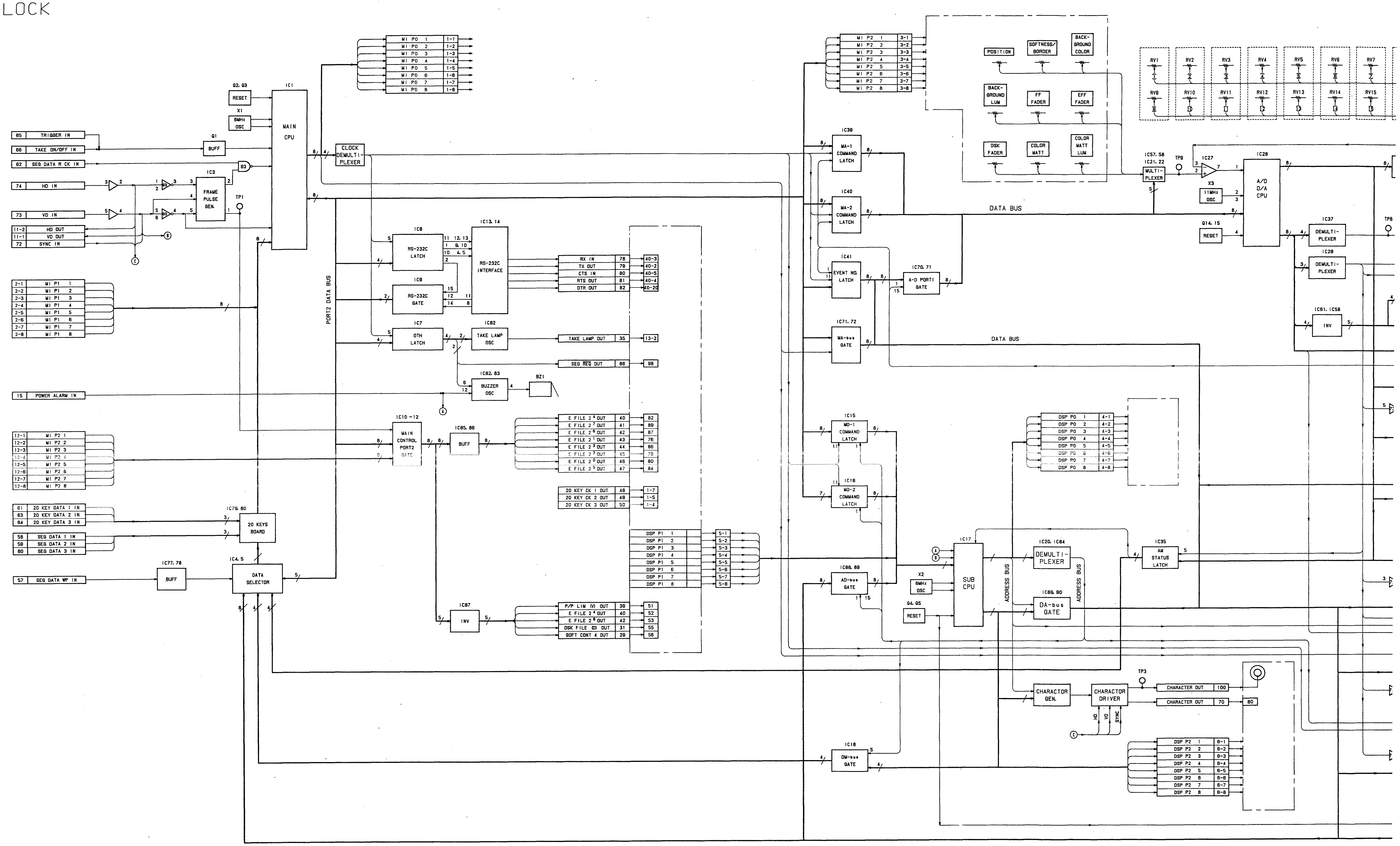
SY-118 (2/2) BLOCK
SY-118A (2/2) BLOCK

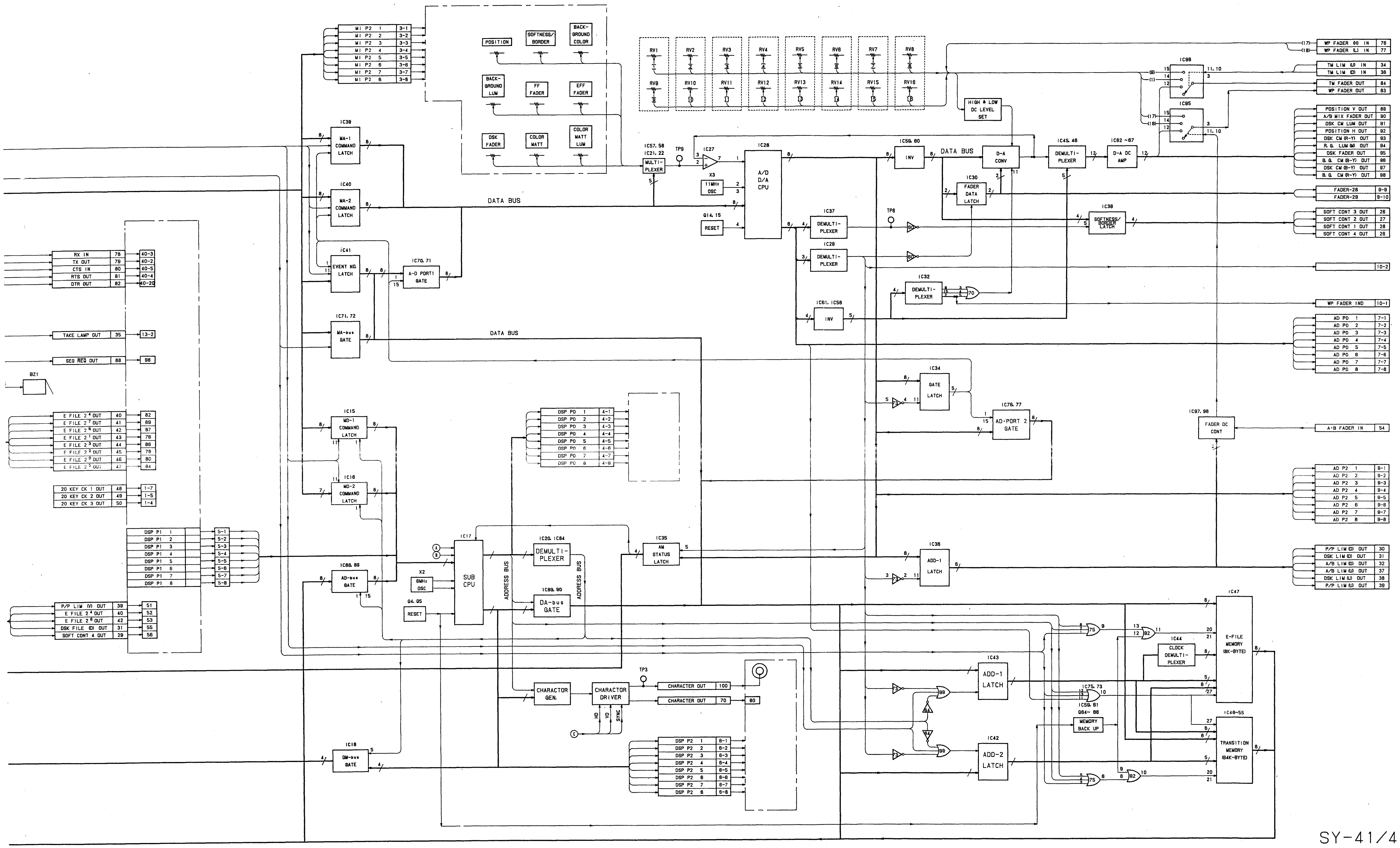

(FROM 1/2) ⑫ CONTROL DATA A~H
IC44
A BUS TALLY CONT
B BUS TALLY CONT
PST BUS TALLY CONT
IC52 MULTI-VIBRATOR
IC68 (1/4) INV
IC68 (2/4) INV
IC68 (3/4) INV
A BUS TALLY
B BUS TALLY
PST BUS TALLY
KY-123
IC48
WIPE SW 3, 6, 7, 8 DRIVER
WIPE SW 3
WIPE SW 6
WIPE SW 7
WIPE SW 8
IC47
WIPE SW 1, 2, 4, 5 DRIVER
WIPE SW 1
WIPE SW 4
WIPE SW 2
WIPE SW 5
TALLY/INCOM
TALLY COMMON
IC43
TALLY 1~4 CONT
IC58 (1/5) DRIVER
IC58 (2/5) DRIVER
IC57 (1/3) DRIVER
IC57 (2/3) DRIVER
RY1
RY2
RY3
RY4
RY5
RY6
RY7
RY8
TALLY 1
TALLY 2
TALLY 3
TALLY 4
TALLY 5
TALLY 6
TALLY 7
TALLY 8
IC45
TALLY 5~7 CONT
WIPE SW 9 DRIVER
IC58 (3/5) DRIVER
IC58 (4/5) DRIVER
IC58 (5/5) DRIVER
WIPE SW 9
IC46
TALLY 8 DRIVER
LMP EXT DRIVER
LMP MIX DRIVER
LMP WP DRIVER
INH CONT.
IC57 (3/3) DRIVER
LAMP EXT
IC68 (4/4) INV
(FROM 1/2) ⑪ DECIMAL DATA
IC50
LED A~D LATCH
LED BLK DRIVER
IC49
LED A~D LATCH
LED 1~3 LATCH
IC70 (1/6) LEVEL SHIFT
IC70 (2/6) LEVEL SHIFT
IC7 (1/2) LEVEL SHIFT
IC70 (3/6) LEVEL SHIFT
IC70 (4/6) LEVEL SHIFT
IC70 (5/6) LEVEL SHIFT
IC70 (6/6) LEVEL SHIFT
IC7 (2/2) LEVEL SHIFT
IC69 (1/4) LEVEL SHIFT
(FROM 1/2) HD
IC71
LED 1~3 SELECT
IC69 (2/4) INV
IC69 (3/4) INV
IC69 (4/4) INV
IC14 (1/3) BUFF
IC14 (2/3) BUFF
IC14 (3/3) BUFF
IC75
LED A~D CONT FOR LED 3
IC74
LED A~D CONT FOR LED 2
IC73
LED A~D CONT FOR LED 1
LED A
LED B
LED C
LED D
LED BLK
LED C1
LED C2
LED C3
IC63
IC62
IC61
IC60
IC66
IC65
IC64
(FROM 1/2) ⑩
(FROM 1/2) ⑧
(FROM 1/2) ⑨
(FROM 1/2) ⑦
EN A B C
IC51 (4/5) INV
IC51 (5/5) INV
IC5


KY-123
ALLY/NCOM①
ALLY/NCOM②
ALLY/NCOM③
ALLY/NCOM④
ALLY/NCOM ⑤~⑧
Y-123
IC50
· LED A~D LATCH · LED BLK DRIVER
IC49
· LED A~D LATCH · LED 1~3 LATCH
IC70 (1/6)
IC70 (2/6)
IC70 (3/6)
IC70 (4/6)
IC70 (5/6)
IC70 (6/6)
IC7 (1/2)
IC7 (2/2)
LEVEL SHIFT
IC75
LED A~D CONT FOR LED 3
IC74
LED A~D CONT FOR LED 2
IC73
LED A~D CONT FOR LED 1
IC71
LED 1~3 SELECT
IC69 (1/4)
IC69 (2/4)
IC69 (3/4)
IC69 (4/4)
INV
IC14 (1/3)
IC14 (2/3)
IC14 (3/3)
BUFF
(FROM 1/2) HD
LED A
LED B
LED C
LED D
LED BLK
LED C1
LED C2
LED C3
1-7
1-9
1-5
1-3
1-8
1-12
1-14
1-16
IC63
IC62
IC61
IC60
IC66
IC65
IC64
EN A B C
(FROM 1/2) ④⓪
(FROM 1/2) ⑧
(FROM 1/2) ③⓪
(FROM 1/2) ⑦
(FROM 1/2) ⑩
(FROM 1/2) ⑤⓪
(FROM 1/2) ②⓪
IC51 (1/5)
IC51 (2/5)
IC51 (3/5)
IC51 (4/5)
IC51 (5/5)
85 SEG DATA 2 59 SY-41
95 SEG DATA 1 58 SY-41
40 SEG DATA (WP) 57 SY-41
91 SEG DATA 3 60 SY-41
100 SEG DATA READ CLOCK 2⁰ 56 SY-41
99 SEG DATA READ CLOCK 2¹ 51 SY-41
97 SEG DATA READ CLOCK 2² 53 SY-41
93 SEG DATA READ CLOCK 2³ 52 SY-41
83 SEG DATA READ CLOCK 2⁴ 55 SY-41
2-39 LAMP MIX 2-39 KY-123
2-41 LAMP WIPE 2-41 KY-123
1-47 INH CONT 1-47 KY-123
A
B
C

SY-118 (2/2) BLOCK
SY-118A (2/2) BLOCK
SEG-2550A (J, UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

SY-41A BLOCK

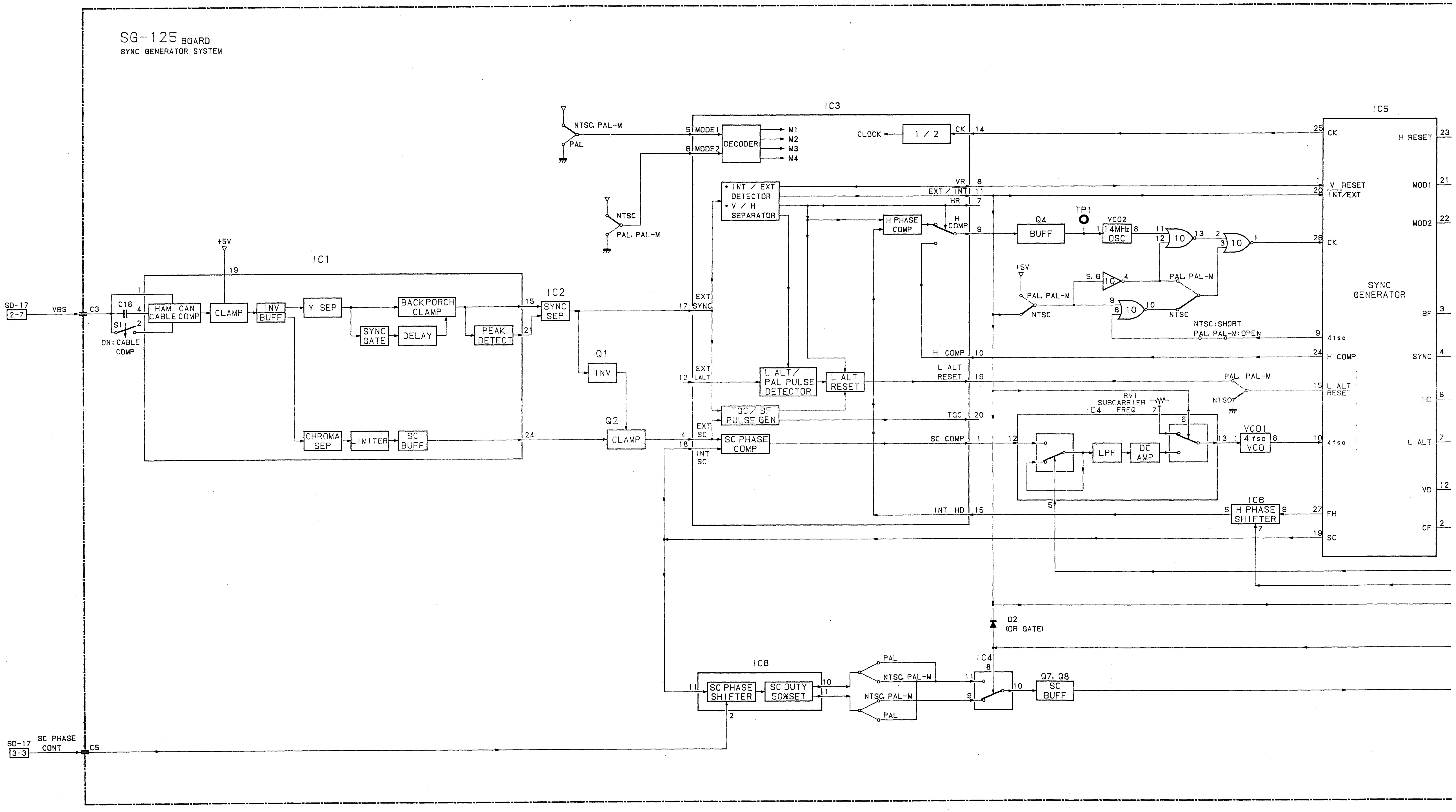

65 TRIGGER IN
66 TAKE ON/OFF IN
62 SEG DATA R CK IN
74 HD IN
73 VD IN
11-2 HD OUT
11-1 VD OUT
72 SYNC IN
2-1 MI P1 1
2-2 MI P1 2
2-3 MI P1 3
2-4 MI P1 4
2-5 MI P1 5
2-6 MI P1 6
2-7 MI P1 7
2-8 MI P1 8
15 POWER ALARM IN
12-1 MI P2 1
12-2 MI P2 2
12-3 MI P2 3
12-4 MI P2 4
12-5 MI P2 5
12-6 MI P2 6
12-7 MI P2 7
12-8 MI P2 8
61 20 KEY DATA 1 IN
63 20 KEY DATA 2 IN
64 20 KEY DATA 3 IN
58 SEG DATA 1 IN
59 SEG DATA 2 IN
60 SEG DATA 3 IN
57 SEG DATA WP IN
Q1 BUFF
93
IC3 FRAME PULSE GEN.
TP1
Q2, Q3 RESET
X1 6MHz OSC
IC1 MAIN CPU
CLOCK DEMULTI-PLEXER
MI P0 1 1-1
MI P0 2 1-2
MI P0 3 1-3
MI P0 4 1-4
MI P0 5 1-5
MI P0 6 1-6
MI P0 7 1-7
MI P0 8 1-8
PORT2 DATA BUS
IC79, 80 20 KEYS BOARD
IC77, 78 BUFF
IC4, 5 DATA SELECTOR
IC8 RS-232C LATCH
IC9 RS-232C GATE
IC13, 14 RS-232C INTERFACE
RX IN 78 40-3
TX OUT 79 40-2
CTS IN 80 40-5
RTS OUT 81 40-4
DTR OUT 82 40-20
IC7 OTH LATCH
IC82 TAKE LAMP OSC
TAKE LAMP OUT 35 13-2
SEG REQ OUT 88 98
IC82, 83 BUZZER OSC
BZ1
IC10 ~12 MAIN CONTROL PORT2 GATE
IC85, 86 BUFF
E FILE 2⁴ OUT 40 82
E FILE 2⁷ OUT 41 89
E FILE 2⁶ OUT 42 87
E FILE 2¹ OUT 43 76
E FILE 2³ OUT 44 86
E FILE 2² OUT 45 78
E FILE 2⁰ OUT 46 80
E FILE 2⁵ OUT 47 84
20 KEY CK 1 OUT 48 1-7
20 KEY CK 2 OUT 49 1-5
20 KEY CK 3 OUT 50 1-4
DSP P1 1 5-1
DSP P1 2 5-2
DSP P1 3 5-3
DSP P1 4 5-4
DSP P1 5 5-5
DSP P1 6 5-6
DSP P1 7 5-7
DSP P1 8 5-8
IC87 INV
P/P LIM (V) OUT 39 51
E FILE 2⁴ OUT 40 52
E FILE 2⁶ OUT 42 53
DSK FILE (D) OUT 31 55
SOFT CONT 4 OUT 29 56
MI P2 1 3-1
MI P2 2 3-2
MI P2 3 3-3
MI P2 4 3-4
MI P2 5 3-5
MI P2 6 3-6
MI P2 7 3-7
MI P2 8 3-8
POSITION
SOFTNESS/ BORDER
BACK-GROUND COLOR
BACK-GROUND LUM
FF FADER
EFF FADER
DSK FADER
COLOR MATT
COLOR MATT LUM
RV1 RV2 RV3 RV4 RV5 RV6 RV7
RV9 RV10 RV11 RV12 RV13 RV14 RV15
IC39 MA-1 COMMAND LATCH
IC40 MA-2 COMMAND LATCH
IC41 EVENT NO. LATCH
IC70, 71 A-D PORT1 GATE
IC71, 72 MA-bus GATE
DATA BUS
IC57, 58 IC21, 22 MULTI-PLEXER
TP9
IC27
X3 11MHz OSC
IC28 A/D D/A CPU
Q14, 15 RESET
IC37 DEMULTI-PLEXER
TP8
IC29 DEMULTI-PLEXER
IC61, IC58 INV
IC15 MD-1 COMMAND LATCH
IC16 MD-2 COMMAND LATCH
IC88, 89 AD-bus GATE
X2 6MHz OSC
Q4, Q5 RESET
IC17 SUB CPU
ADDRESS BUS
IC20, IC84 DEMULTI-PLEXER
IC89, 90 DA-bus GATE
IC35 AM STATUS LATCH
DSP P0 1 4-1
DSP P0 2 4-2
DSP P0 3 4-3
DSP P0 4 4-4
DSP P0 5 4-5
DSP P0 6 4-6
DSP P0 7 4-7
DSP P0 8 4-8
CHARACTOR GEN.
CHARACTOR DRIVER
HD VD SYNC
TP3
CHARACTER OUT 100
CHARACTER OUT 70 80
IC18 DM-bus GATE
DSP P2 1 6-1
DSP P2 2 6-2
DSP P2 3 6-3
DSP P2 4 6-4
DSP P2 5 6-5
DSP P2 6 6-6
DSP P2 7 6-7
DSP P2 8 6-8
A B C

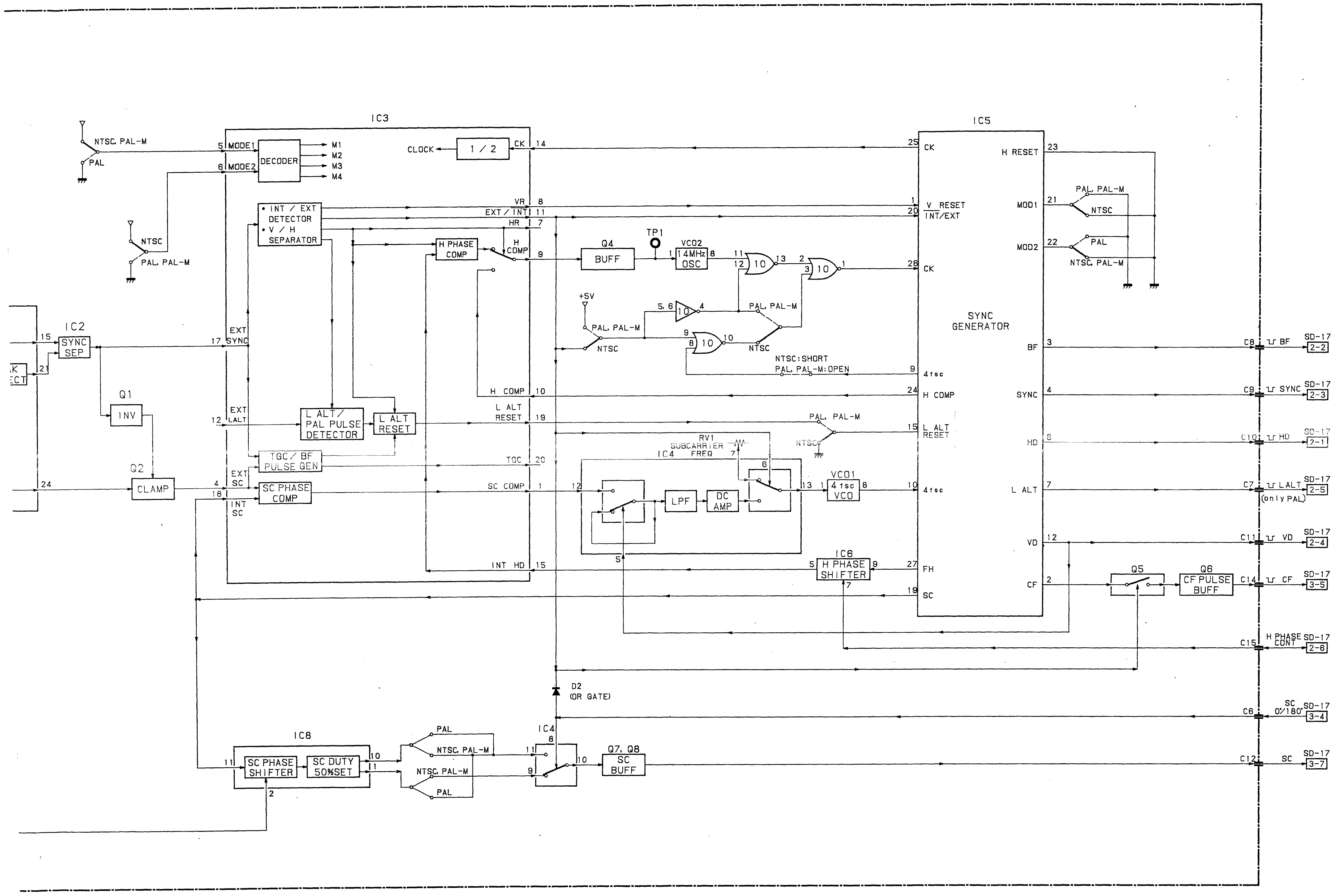

MI P2 1 3-1
MI P2 2 3-2
MI P2 3 3-3
MI P2 4 3-4
MI P2 5 3-5
MI P2 6 3-6
MI P2 7 3-7
MI P2 8 3-8
POSITION
SOFTNESS/ BORDER
BACK- GROUND COLOR
BACK- GROUND LUM
FF FADER
EFF FADER
DSK FADER
COLOR MATT
COLOR MATT LUM
IC39
MA-1 COMMAND LATCH
IC40
MA-2 COMMAND LATCH
DATA BUS
IC41
EVENT NO. LATCH
IC70, 71
A-D PORT1 GATE
IC71, 72
MA-bus GATE
DATA BUS
RV1
RV2
RV3
RV4
RV5
RV6
RV7
RV8
RV9
RV10
RV11
RV12
RV13
RV14
RV15
RV16
IC57, 58
IC21, 22
MULTI- PLEXER
TP9
IC27
X3
11MHz OSC
Q14, 15
RESET
IC28
A/D D/A CPU
IC59, 60
INV
DATA BUS
HIGH & LOW DC LEVEL SET
D-A CONV
IC30
FADER DATA LATCH
IC45, 46
DEMULTI- PLEXER
IC62 ~67
D-A DC AMP
IC96
IC95
IC37
DEMULTI- PLEXER
IC29
DEMULTI- PLEXER
TP8
IC38
SOFTNESS/ BORDER LATCH
IC32
DEMULTI- PLEXER
IC61, IC58
INV
IC34
GATE LATCH
IC76, 77
AD-PORT 2 GATE
IC97, 98
FADER DC CONT
IC36
ADD-1 LATCH
IC47
E-FILE MEMORY (8K-BYTE)
IC44
CLOCK DEMULTI- PLEXER
IC43
ADD-1 LATCH
IC42
ADD-2 LATCH
IC75, 73
IC59, 61
Q64~ 66
MEMORY BACK UP
IC48~55
TRANSITION MEMORY (64K-BYTE)
WP FADER (H) IN 76
WP FADER (L) IN 77
TM LIM (U) IN 34
TM LIM (D) IN 36
TM FADER OUT 84
WP FADER OUT 83
POSITION V OUT 89
A/B MIX FADER OUT 90
DSK CM LUM OUT 91
POSITION H OUT 92
DSK CM (R-Y) OUT 93
R. G. LUM (M) OUT 94
DSK FADER OUT 95
B. G. CM (B-Y) OUT 96
DSK CM (B-Y) OUT 97
B. G. CM (R-Y) OUT 98
FADER-28 9-9
FADER-29 9-10
SOFT CONT 3 OUT 26
SOFT CONT 2 OUT 27
SOFT CONT 1 OUT 28
SOFT CONT 4 OUT 29
10-2
WP FADER IND 10-1
AD P0 1 7-1
AD P0 2 7-2
AD P0 3 7-3
AD P0 4 7-4
AD P0 5 7-5
AD P0 6 7-6
AD P0 7 7-7
AD P0 8 7-8
A·B FADER IN 54
AD P2 1 9-1
AD P2 2 9-2
AD P2 3 9-3
AD P2 4 9-4
AD P2 5 9-5
AD P2 6 9-6
AD P2 7 9-7
AD P2 8 9-8
P/P LIM (D) OUT 30
DSK LIM (D) OUT 31
A/B LIM (D) OUT 32
A/B LIM (U) OUT 37
DSK LIM (U) OUT 38
P/P LIM (U) OUT 39
RX IN 78 40-3
TX OUT 79 40-2
CTS IN 80 40-5
RTS OUT 81 40-4
DTR OUT 82 40-20
TAKE LAMP OUT 35 13-2
SEG REQ OUT 88 98
BZ1
E FILE 2⁴ OUT 40 82
E FILE 2⁷ OUT 41 89
E FILE 2⁶ OUT 42 87
E FILE 2¹ OUT 43 76
E FILE 2³ OUT 44 86
E FILE 2² OUT 45 78
E FILE 2⁰ OUT 46 80
E FILE 2⁵ OUT 47 84
20 KEY CK 1 OUT 48 1-7
20 KEY CK 2 OUT 49 1-5
20 KEY CK 3 OUT 50 1-4
DSP P1 1 5-1
DSP P1 2 5-2
DSP P1 3 5-3
DSP P1 4 5-4
DSP P1 5 5-5
DSP P1 6 5-6
DSP P1 7 5-7
DSP P1 8 5-8
P/P LIM (V) OUT 39 51
E FILE 2⁴ OUT 40 52
E FILE 2⁶ OUT 42 53
DSK FILE (D) OUT 31 55
SOFT CONT 4 OUT 29 56
IC15
MD-1 COMMAND LATCH
IC16
MD-2 COMMAND LATCH
IC88, 89
AD-bus GATE
IC17
SUB CPU
X2
6MHz OSC
Q4, Q5
RESET
ADDRESS BUS
IC20, IC84
DEMULTI- PLEXER
IC89, 90
DA-bus GATE
ADDRESS BUS
IC35
AM STATUS LATCH
DSP P0 1 4-1
DSP P0 2 4-2
DSP P0 3 4-3
DSP P0 4 4-4
DSP P0 5 4-5
DSP P0 6 4-6
DSP P0 7 4-7
DSP P0 8 4-8
CHARACTOR GEN.
CHARACTOR DRIVER
TP3
HD
VD
SYNC
CHARACTER OUT 100
CHARACTER OUT 70 80
DSP P2 1 6-1
DSP P2 2 6-2
DSP P2 3 6-3
DSP P2 4 6-4
DSP P2 5 6-5
DSP P2 6 6-6
DSP P2 7 6-7
DSP P2 8 6-8
IC18
DM-bus GATE

SY-41/41A BLOCK

SEG-2550 (J) (UC)
SEG-2550P (EK)
SEG-2550PM (BR)
SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

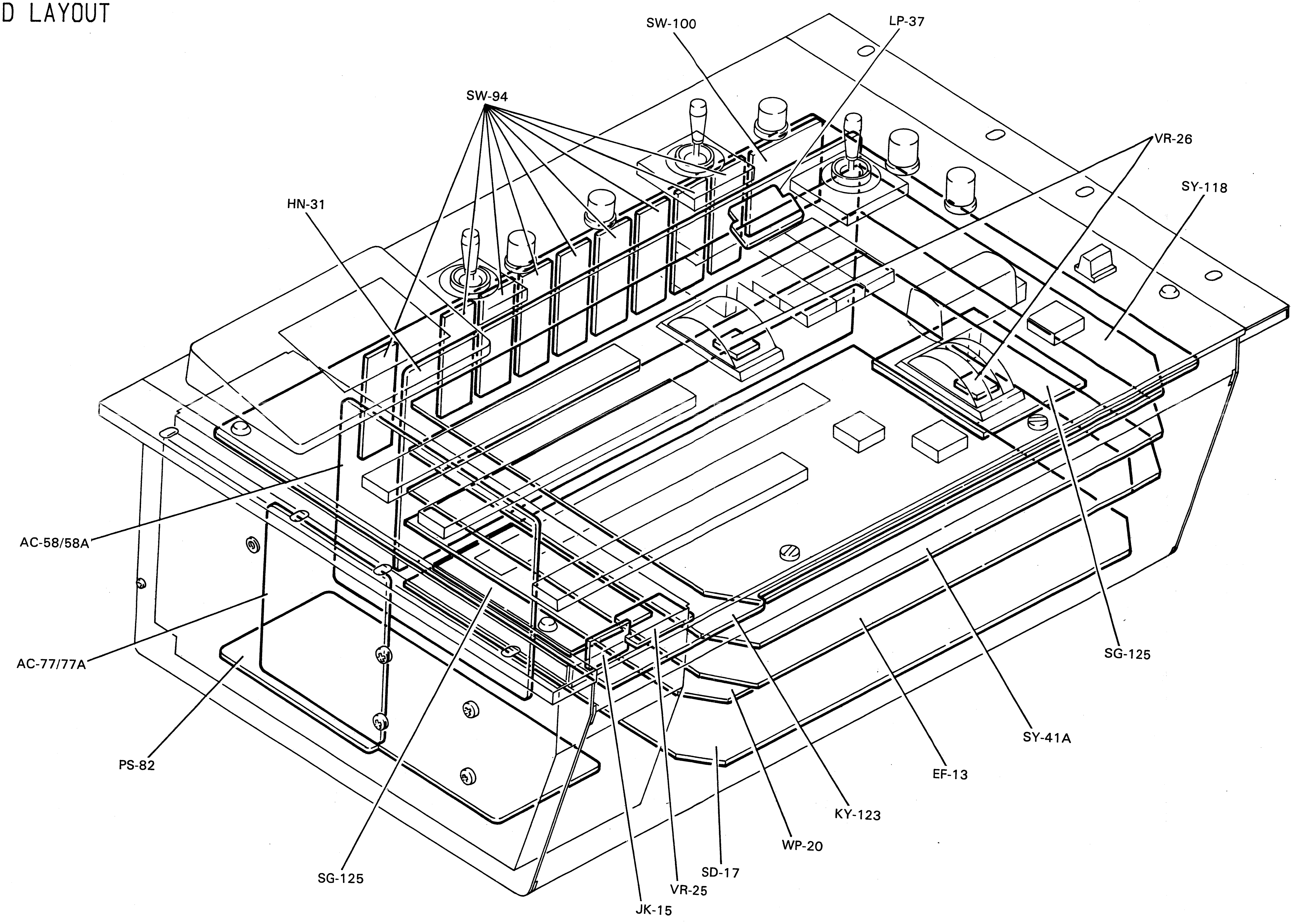
SG-125 BLOCK


SG-125 BOARD
SYNC GENERATOR SYSTEM
SD-17 2-7
VBS
C3
C18
S1
ON: CABLE COMP
+5V
19
IC1
HAM CAN CABLE COMP
CLAMP
INV BUFF
Y SEP
BACKPORCH CLAMP
SYNC GATE
DELAY
PEAK DETECT
CHROMA SEP
LIMITER
SC BUFF
15
21
24
IC2
SYNC SEP
Q1
INV
Q2
CLAMP
NTSC, PAL-M
PAL
NTSC
PAL, PAL-M
IC3
MODE1
MODE2
DECODER
M1
M2
M3
M4
CLOCK
1 / 2
CK
14
• INT / EXT DETECTOR
• V / H SEPARATOR
VR 8
EXT / INT 11
HR 7
H PHASE COMP
H COMP 9
EXT SYNC 17
EXT LALT 12
L ALT/ PAL PULSE DETECTOR
L ALT RESET
H COMP 10
L ALT RESET 19
TGC / BF PULSE GEN
TGC 20
EXT SC 4
INT SC 18
SC PHASE COMP
SC COMP 1
INT HD 15
Q4
BUFF
TP1
VCO2
14MHz OSC
10
+5V
PAL, PAL-M
NTSC
NTSC:SHORT
PAL, PAL-M:OPEN
RV1 SUBCARRIER FREQ
IC4
LPF
DC AMP
VCO1
4 fsc VCO
IC6
H PHASE SHIFTER
IC5
SYNC GENERATOR
CK
V RESET
INT/EXT
4fsc
H COMP
L ALT RESET
FH
SC
H RESET
MOD1
MOD2
BF
SYNC
HD
L ALT
VD
CF
D2
(OR GATE)
IC8
SC PHASE SHIFTER
SC DUTY 50%SET
PAL
NTSC, PAL-M
Q7, Q8
SC BUFF
SD-17 3-3
SC PHASE CONT
C5


IC3
NTSC, PAL-M
PAL
MODE1
MODE2
DECODER
M1
M2
M3
M4
CLOCK
1 / 2
CK
• INT / EXT DETECTOR
• V / H SEPARATOR
VR
EXT / INT
HR
H PHASE COMP
H COMP
NTSC
PAL, PAL-M
IC2
SYNC SEP
EXT SYNC
Q1
INV
EXT LALT
L ALT/ PAL PULSE DETECTOR
L ALT RESET
TGC / BF PULSE GEN
TGC
Q2
CLAMP
EXT SC
INT SC
SC PHASE COMP
SC COMP
INT HD
H COMP
L ALT RESET
Q4
BUFF
TP1
VCO2
14MHz OSC
+5V
PAL, PAL-M
NTSC
NTSC: SHORT
PAL, PAL-M: OPEN
RV1
SUBCARRIER FREQ
IC4
LPF
DC AMP
VCO1
4 fsc VCO
IC6
H PHASE SHIFTER
IC5
CK
H RESET
V RESET
INT/EXT
MOD1
MOD2
SYNC GENERATOR
4fsc
H COMP
L ALT RESET
FH
SC
BF
SYNC
HD
L ALT
VD
CF
Q5
Q6
CF PULSE BUFF
D2
(OR GATE)
IC8
SC PHASE SHIFTER
SC DUTY 50%SET
PAL
NTSC, PAL-M
Q7, Q8
SC BUFF
C8 BF SD-17 2-2
C9 SYNC SD-17 2-3
C10 HD SD-17 2-1
C7 L ALT SD-17 2-5
(only PAL)
C11 VD SD-17 2-4
C14 CF SD-17 3-5
C15 H PHASE CONT SD-17 2-6
C6 SC 0°/180° SD-17 3-4
C12 SC SD-17 3-7

SG-125 BOARD
SEG-2550A (J, UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

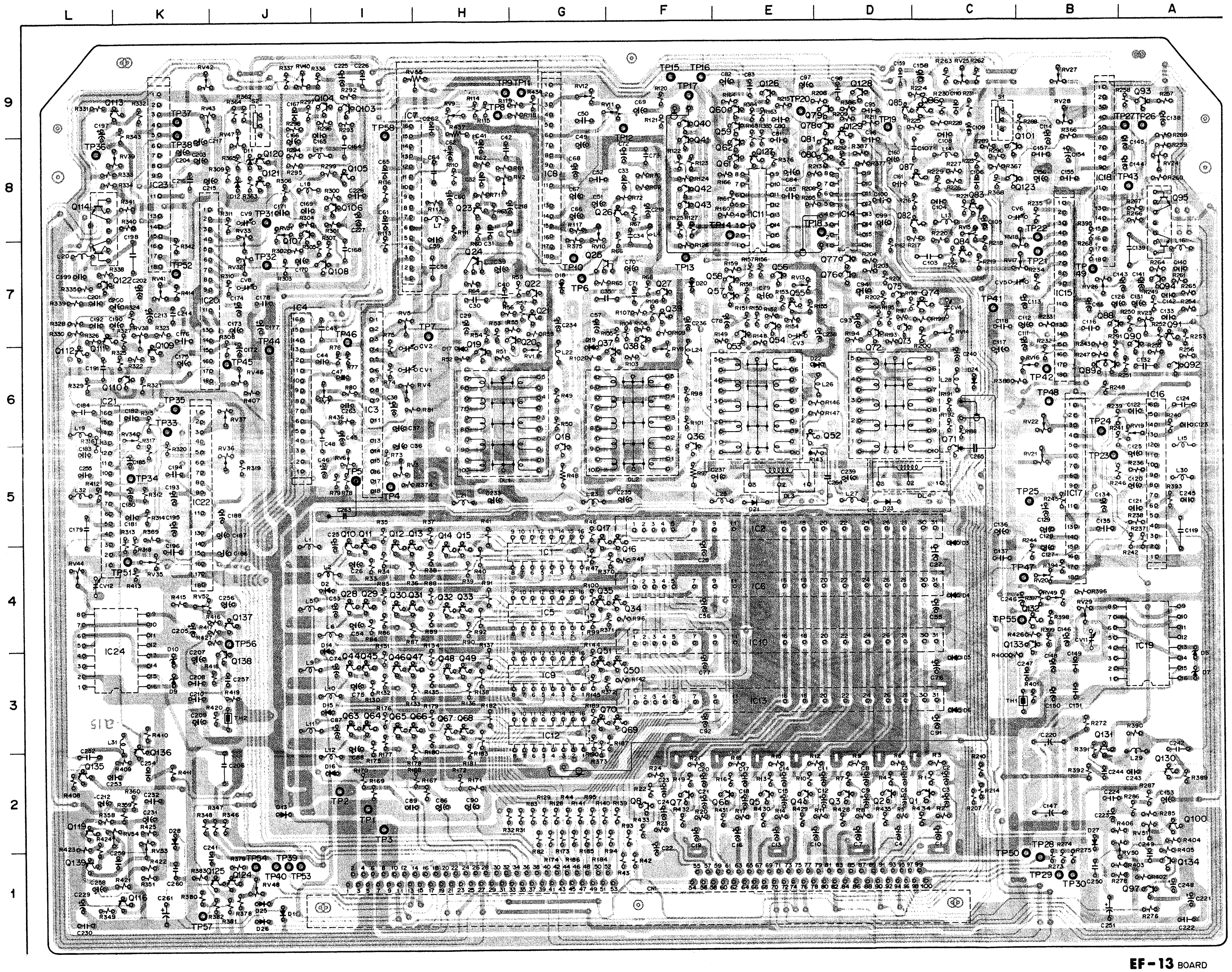
2-2. BOARD LAYOUT


SW-100
LP-37
SW-94
VR-26
SY-118
HN-31
AC-58/58A
AC-77/77A
PS-82
SG-125
SG-125
SY-41A
EF-13
KY-123
WP-20
SD-17
VR-25
JK-15

2-3. MOUNTED DIAGRAM & SCHEMATIC DIAGRAM

EF-13 BOARD

SOLDERING SIDE



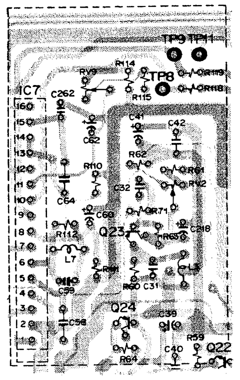
EF-13 BOARD

—SOLDERING SIDE—

1-617-833-13,14,15

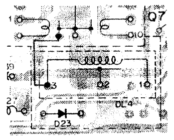
SEG-2550	(J)	10051~
SEG-2550	(UC)	10206~
SEG-2550P	(EK)	10296~
SEG-2550PM	(BR)	10006~
SEG-2550A	(J)	
SEG-2550A	(UC)	
SEG-2550AP	(EK)	
SEG-2550APM	(BR)	

CN1	F·1
CV1	I·6
CV2	I·6
CV3	E·7
CV4	C·7
CV5	B·7
CV6	B·8
CV8	J·7
CV9	J·8
CV11	B·4
CV12	L·4
D1	J·1
D2	I·4
D3	C·4
D4	C·4
D5	C·3
D6	C·3
D7	A·3
D8	A·3
D9	K·3
D10	K·3
D11	J·8
D12	J·8
D13	J·2
D14	I·3
D15	I·3
D16	I·2
D17	H·6
D18	G·7
D19	G·6
D20	F·7
D21	E·5
D22	D·6
D23	D·5
D24	C·6
D25	J·1
D26	J·1
D27	B·2
D28	K·2
DL1	H·6
DL2	F·6
DL3	E·6
DL4	D·6
DL7	E·5
DL8	D·5
IC1	G·4
IC2	E·5
IC3	I·6
IC4	J·6
IC5	G·4
IC6	E·4
IC7	I·8
IC8	G·8
IC9	G·3
IC10	E·3
IC11	E·8
IC12	G·3
IC13	E·3
IC14	D·8
IC15	B·7
IC16	A·5
IC17	B·5
IC18	B·8
IC19	A·3
IC20	K·7
IC21	L·5
IC22	K·5
IC23	K·8
IC24	L·3
Q1	C·2
Q2	D·2
Q3	D·2
Q4	E·2
Q5	E·2
Q6	E·2
Q7	F·2
Q8	F·2
Q10	I·4
Q11	I·4
Q12	I·4
Q13	I·4
Q14	H·4
Q15	H·4
Q16	F·4
Q17	G·4
Q18	G·5
Q19	H·6
Q20	H·7
Q21	G·7
Q22	G·7
Q23	H·8
Q24	H·7
Q25	G·7
Q26	F·8
Q27	F·7
Q28	I·4
Q29	I·4
Q30	I·4
Q31	I·4
Q32	H·4
Q33	H·4
Q34	F·4
Q35	G·4
Q36	F·5
Q37	F·6
Q38	F·7
Q39	F·7
Q40	F·9
Q41	F·8
Q42	F·8
Q43	F·8
Q44	I·3
Q45	I·3
Q46	I·3
Q47	I·3
Q48	H·3
Q49	H·3
Q50	F·3
Q51	G·3
Q52	E·6
Q53	E·7
Q54	E·7
Q55	E·7
Q56	E·7
Q57	E·7
Q58	E·7
Q59	E·9
Q60	E·9
Q61	E·8
Q62	E·8
Q63	I·3
Q64	I·3
Q65	I·3
Q66	I·3
Q67	H·3
Q68	H·3
Q69	F-3
Q70	G·3
Q71	C·5
Q72	D·7
Q73	D·7
Q74	C·7
Q75	D·7
Q76	D·7
Q77	D·7
Q78	D·9
Q79	D·9
Q80	D·8
Q81	D·8
Q82	C·8
Q83	C·8
Q84	C·7
Q85	D·9
Q86	C·9
Q87	C·8
Q88	B·7
Q89	B·6
Q90	A·6
Q91	A·7
Q92	A·6
Q93	A·9
Q94	A·7
Q95	A·8
Q97	A·1
Q100	A·2
Q101	C·8
Q103	I·9
Q104	I·9
Q105	I·8
Q106	I·8
Q107	J·8
Q108	I·7
Q109	K·6
Q110	K·6
Q111	L·7
Q112	L·6
Q113	K·9
Q114	L·8
Q116	L·1
Q119	L·2
Q120	J·8
Q121	J·8
Q122	L·7
Q123	C·8
Q124	J·1
Q125	K·1
Q126	E·9
Q127	E·8
Q128	D·9
Q129	D·9
Q130	A·2
Q131	B·2
Q132	B·4
Q133	B·3
Q134	A·1
Q135	L·5
Q136	K·2
Q137	J·4
Q138	J·3
Q139	L·1
RV1	G·6
RV2	H·8
RV3	I·5
RV4	I·6
RV5	I·7
RV6	I·5
RV7	I·6
RV8	F·6
RV9	H·9
RV10	G·8
RV11	F·9
RV12	G·9
RV13	E·7
RV14	C·7
RV15	C·8
RV16	B·6
RV17	B·7
RV18	B·7
RV19	A·6
RV20	B·4
RV21	B·5
RV22	B·6
RV23	A·7
RV24	A·8
RV25	C·9
RV26	B·7
RV27	B·9
RV28	B·9
RV29	B·4
RV31	J·8
RV32	J·7
RV33	J·7
RV34	K·6
RV35	K·4
RV36	J·5
RV37	J·6
RV38	K·7
RV39	L·8
RV40	J·9
RV41	K·7
RV42	K·9
RV43	K·9
RV44	L·4
RV46	J·6
RV47	J·8
RV48	J·1
RV49	B·4
RV50	B·1
RV51	A·2
RV52	K·4
RV53	K·2
RV54	L·2
S1	C·9
S2	J·9
TH1	B·3
TH2	J·3
TP1	I·2
TP2	I·2
TP3	I·2
TP4	I·5
TP5	I·5
TP6	G·7
TP7	H·7
TP8	H·9
TP9	H·9
TP10	G·7
TP11	G·9
TP12	F·9
TP13	F·7
TP14	E·8
TP15	F·9
TP16	F·9
TP17	F·9
TP18	D·8
TP19	D·9
TP20	E·9
TP21	B·7
TP22	B·7
TP23	B·5
TP24	B·6
TP25	B·5
TP26	A·9
TP27	A·9
TP28	B·1
TP29	B·1
TP30	B·1
TP31	J·8
TP32	J·7
TP33	K·6
TP34	K·5
TP35	K·6
TP36	L·8
TP37	K·9
TP38	K·9
TP39	J·1
TP40	J·1
TP41	C·7
TP42	B·6
TP43	A·8
TP44	J·6
TP45	J·6
TP46	I·6
TP47	B·4
TP48	B·6
TP49	B·7
TP50	B·1
TP51	K·4
TP52	K·7
TP53	J·1
TP54	J·1
TP55	B·4
TP56	J·4
TP57	K·1
TP58	I·9



1-617-833-13

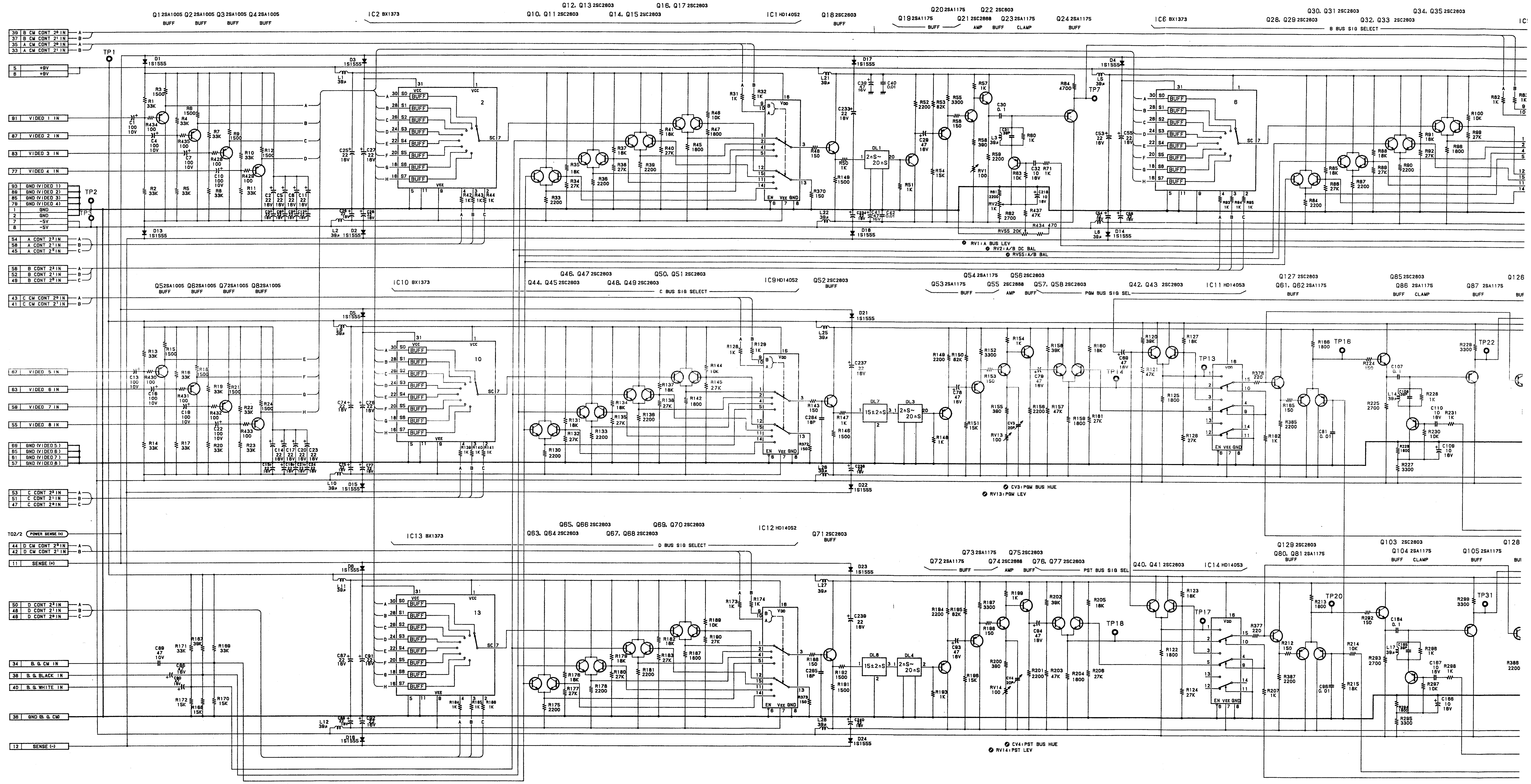
Ser NO. 10051 ~ 10060 (J)
Ser NO. 10206 ~ 10265 (UC)
Ser NO. 10296 ~ 10835 (EK)

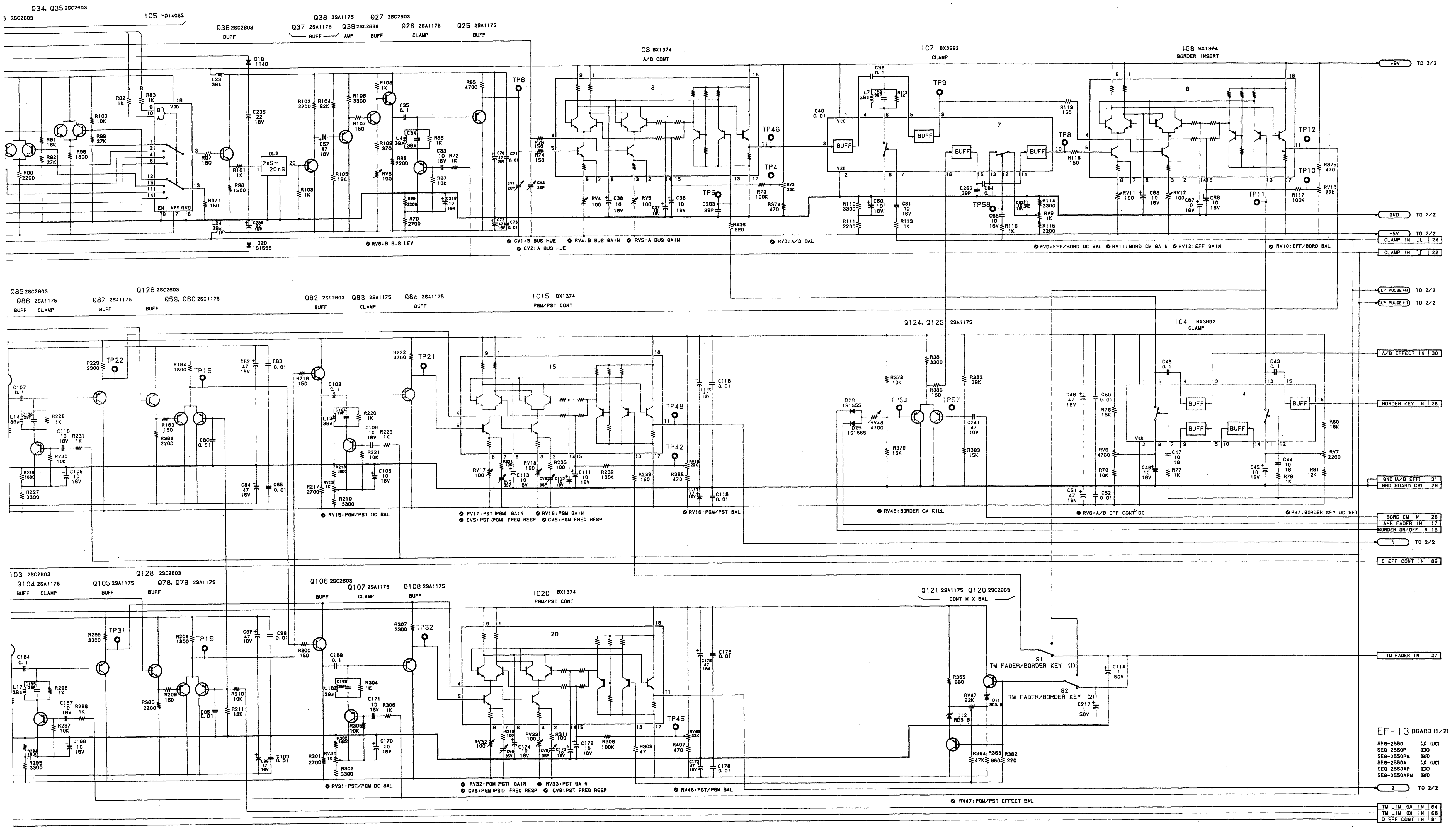


1-617-833-13,14

Ser NO. 10051 ~ 10120 (J)
Ser NO. 10206 ~ 10315 (UC)
Ser NO. 10296 ~ 10535 (EK)
Ser NO. 10006 ~ 10015 (BRZ)

EF-13 (1/2) BOARD

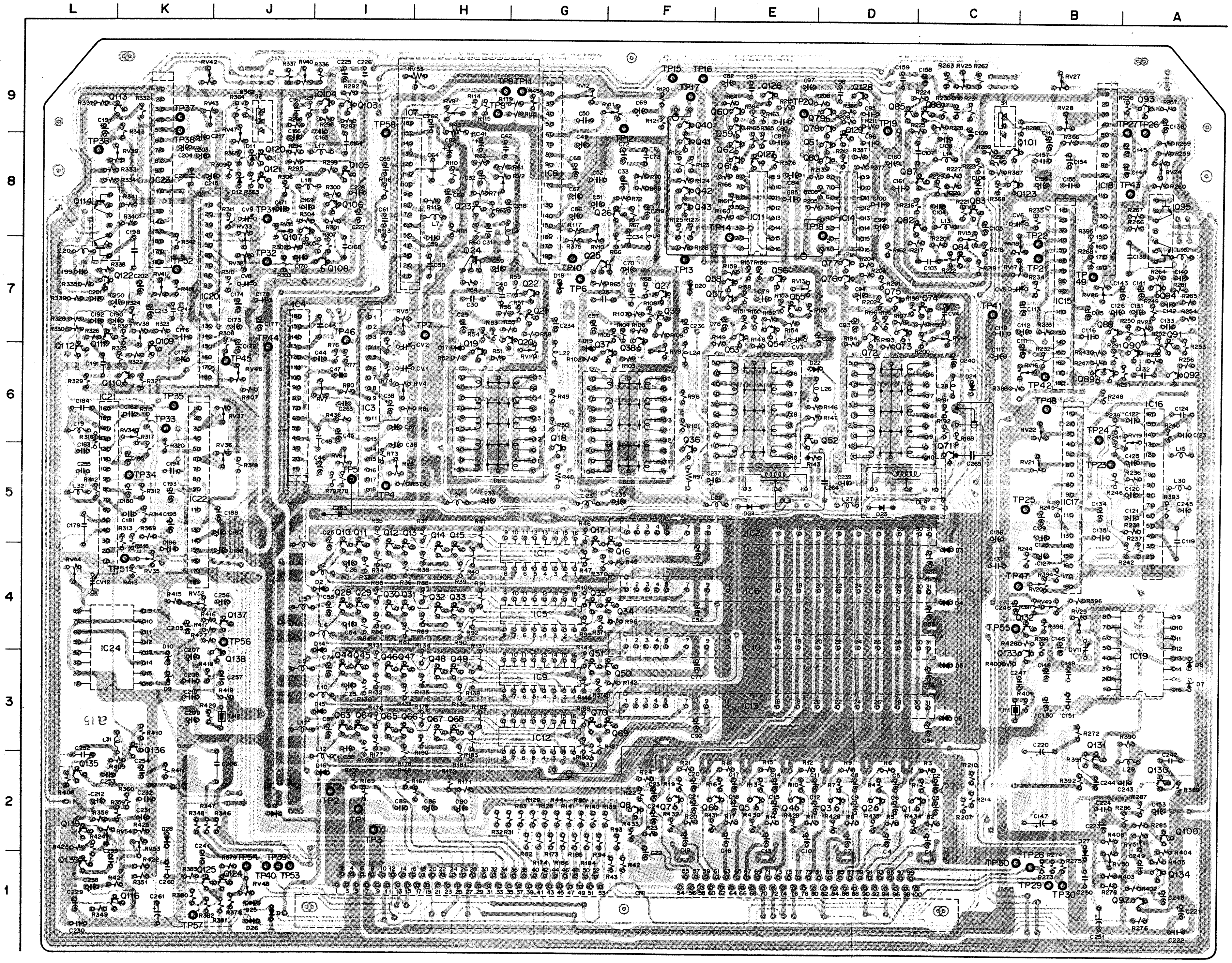

Q1 2SA1005 Q2 2SA1005 Q3 2SA1005 Q4 2SA1005
BUFF
IC2 BX1373
Q10, Q11 2SC2603
Q12, Q13 2SC2603
Q14, Q15 2SC2603
Q16, Q17 2SC2603
IC1 HD14052
Q18 2SC2603
Q19 2SA1175
Q20 2SA1175
Q21 2SC2888
Q22 2SC603
Q23 2SA1175
Q24 2SA1175
AMP
CLAMP
IC6 BX1373
Q28, Q29 2SC2603
Q30, Q31 2SC2603
Q32, Q33 2SC2603
Q34, Q35 2SC2603
B BUS SIG SELECT
TP1
TP2
TP3
TP7
VIDEO 1 IN
VIDEO 2 IN
VIDEO 3 IN
VIDEO 4 IN
+9V
GND (VIDEO 1)
GND (VIDEO 2)
GND (VIDEO 3)
GND (VIDEO 4)
GND
-5V
A CONT 2² IN
A CONT 2¹ IN
A CONT 2⁰ IN
B CONT 2² IN
B CONT 2¹ IN
B CONT 2⁰ IN
B CM CONT 2⁰ IN
B CM CONT 2¹ IN
A CM CONT 2⁰ IN
A CM CONT 2¹ IN
DL1 2nS~20nS
RV1: A BUS LEV
RV2: A/B DC BAL
RV55: A/B BAL
Q5 2SA1005 Q6 2SA1005 Q7 2SA1005 Q8 2SA1005
IC10 BX1373
Q44, Q45 2SC2603
Q46, Q47 2SC2603
Q48, Q49 2SC2603
Q50, Q51 2SC2603
C BUS SIG SELECT
IC9 HD14052
Q52 2SC2603
Q53 2SA1175
Q54 2SA1175
Q55 2SC2888
Q56 2SC2603
Q57, Q58 2SC2603
PGM BUS SIG SEL
Q42, Q43 2SC2603
IC11 HD14053
Q127 2SC2603
Q61, Q62 2SA1175
Q85 2SC2603
Q86 2SA1175
Q87 2SA1175
Q126
C CM CONT 2⁰ IN
C CM CONT 2¹ IN
VIDEO 5 IN
VIDEO 6 IN
VIDEO 7 IN
VIDEO 8 IN
GND (VIDEO 5)
GND (VIDEO 6)
GND (VIDEO 7)
GND (VIDEO 8)
C CONT 2² IN
C CONT 2¹ IN
C CONT 2⁰ IN
DL7 15±2nS
DL3 2nS~20nS
TP13
TP14
TP16
TP22
CV3: PGM BUS HUE
RV13: PGM LEV
POWER SENSE (+)
D CM CONT 2⁰ IN
D CM CONT 2¹ IN
SENSE (+)
IC13 BX1373
Q63, Q64 2SC2603
Q65, Q66 2SC2603
Q67, Q68 2SC2603
Q69, Q70 2SC2603
D BUS SIG SELECT
IC12 HD14052
Q71 2SC2603
Q72 2SA1175
Q73 2SA1175
Q74 2SC2888
Q75 2SC2603
Q76, Q77 2SC2603
PST BUS SIG SEL
Q40, Q41 2SC2603
IC14 HD14053
Q129 2SC2603
Q80, Q81 2SA1175
Q103 2SC2603
Q104 2SA1175
Q105 2SA1175
Q128
D CONT 2² IN
D CONT 2¹ IN
D CONT 2⁰ IN
B.G CM IN
B.G BLACK IN
B.G WHITE IN
GND (B.G CM)
SENSE (-)
DL8 15±2nS
DL4 2nS~20nS
TP17
TP18
TP20
TP31
CV4: PST BUS HUE
RV14: PST LEV


Q34, Q35 2SC2603
IC5 HD14052
Q36 2SC2603 BUFF
Q38 2SA1175
Q37 2SA1175 BUFF
Q39 2SC2688 AMP
Q27 2SC2603 BUFF
Q26 2SA1175 CLAMP
Q25 2SA1175 BUFF
DL2 2nS~20nS
D19 1T40
D20 1S1555
IC3 BX1374 A/B CONT
IC7 BX3992 CLAMP
IC8 BX1374 BORDER INSERT
TP6
TP46
TP4
TP5
TP9
TP58
TP8
TP12
TP10
TP11
BUFF
RV8:B BUS LEV
CV1:B BUS HUE
CV2:A BUS HUE
RV4:B BUS GAIN
RV5:A BUS GAIN
RV3:A/B BAL
RV9:EFF/BORD DC BAL
RV11:BORD CM GAIN
RV12:EFF GAIN
RV10:EFF/BORD BAL
+9V TO 2/2
GND TO 2/2
-5V TO 2/2
CLAMP IN ⎍ 24
CLAMP IN ⎍ 22
CLP PULSE (+) TO 2/2
CLP PULSE (-) TO 2/2
Q85 2SC2603
Q86 2SA1175 BUFF CLAMP
Q87 2SA1175 BUFF
Q126 2SC2603
Q59, Q60 2SC1175 BUFF
Q82 2SC2603 BUFF
Q83 2SA1175 CLAMP
Q84 2SA1175 BUFF
IC15 BX1374 PGM/PST CONT
Q124, Q125 2SA1175
IC4 BX3992 CLAMP
TP22
TP15
TP21
TP48
TP42
TP54
TP57
D26 1S1555
D25 1S1555
RV15:PGM/PST DC BAL
RV17:PST (PGM) GAIN
RV18:PGM GAIN
CV5:PST (PGM) FREQ RESP
CV6:PGM FREQ RESP
RV16:PGM/PST BAL
RV48:BORDER CM KILL
RV6:A/B EFF CONT DC
RV7:BORDER KEY DC SET
A/B EFFECT IN 30
BORDER KEY IN 28
GND (A/B EFF) 31
GND (BOARD CM) 29
BORD CM IN 26
A-B FADER IN 17
BORDER ON/OFF IN 19
1 TO 2/2
C EFF CONT IN 86
103 2SC2603
Q104 2SA1175 BUFF CLAMP
Q105 2SA1175 BUFF
Q128 2SC2603
Q78, Q79 2SA1175 BUFF
Q106 2SC2603 BUFF
Q107 2SA1175 CLAMP
Q108 2SA1175 BUFF
IC20 BX1374 PGM/PST CONT
Q121 2SA1175 Q120 2SC2603 CONT MIX BAL
TP31
TP19
TP32
TP45
S1 TM FADER/BORDER KEY (1)
S2 TM FADER/BORDER KEY (2)
D11 RD3.9
D12 RD3.9
RV31:PST/PGM DC BAL
RV32:PGM (PST) GAIN
RV33:PST GAIN
CV8:PGM (PST) FREQ RESP
CV9:PST FREQ RESP
RV46:PST/PGM BAL
RV47:PGM/PST EFFECT BAL
TM FADER IN 27
2 TO 2/2
TM LIM (U) IN 64
TM LIM (D) IN 68
D EFF CONT IN 81

EF-13 BOARD (1/2)

SEG-2550 (J) (UC)
SEG-2550P (EK)
SEG-2550PM (BR)
SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

EF-13 BOARD
SOLDERING SIDE



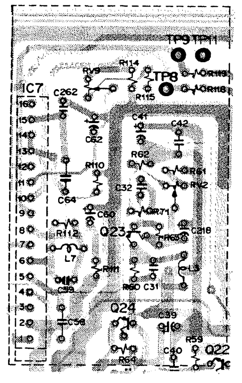
EF-13 BOARD

—SOLDERING SIDE—

1-617-833-13,14,15

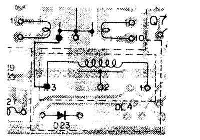
SEG-2550 (J) 10051~
SEG-2550 (UC) 10206~
SEG-2550P (EK) 10296~
SEG-2550PM (BR) 10006~
SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

CN1	F-1
CV1	I-6
CV2	I-6
CV3	E-7
CV4	C-7
CV5	B-7
CV6	B-8
CV8	J-7
CV9	J-8
CV11	B-4
CV12	L-4
D1	J-1
D2	I-4
D3	C-4
D4	C-4
D5	C-3
D6	C-3
D7	A-3
D8	A-3
D9	K-3
D10	K-3
D11	J-8
D12	J-8
D13	J-2
D14	I-3
D15	I-3
D16	I-2
D17	H-6
D18	G-7
D19	G-6
D20	F-7
D21	E-5
D22	D-6
D23	D-5
D24	C-6
D25	J-1
D26	J-1
D27	B-2
D28	K-2
DL1	H-6
DL2	F-6
DL3	E-6
DL4	D-6
DL7	E-5
DL8	D-5
IC1	G-4
IC2	E-5
IC3	I-6
IC4	J-6
IC5	G-4
IC6	E-4
IC7	I-8
IC8	G-8
IC9	G-3
IC10	E-3
IC11	E-8
IC12	G-3
IC13	E-3
IC14	D-8
IC15	B-7
IC16	A-5
IC17	B-5
IC18	B-8
IC19	A-3
IC20	K-7
IC21	L-5
IC22	K-5
IC23	K-8
IC24	L-3
Q1	C-2
Q2	D-2
Q3	D-2
Q4	E-2
Q5	E-2
Q6	E-2
Q7	F-2
Q8	F-2
Q10	I-4
Q11	I-4
Q12	I-4
Q13	I-4
Q14	H-4
Q15	H-4
Q16	F-4
Q17	G-4
Q18	G-5
Q19	H-6
Q20	H-7
Q21	G-7
Q22	G-7
Q23	H-8
Q24	H-7
Q25	G-7
Q26	F-8
Q27	F-7
Q28	I-4
Q29	I-4
Q30	I-4
Q31	I-4
Q32	H-4
Q33	H-4
Q34	F-4
Q35	G-4
Q36	F-5
Q37	F-6
Q38	F-7
Q39	F-7
Q40	F-9
Q41	F-8
Q42	F-8
Q43	F-8
Q44	I-3
Q45	I-3
Q46	I-3
Q47	I-3
Q48	H-3
Q49	H-3
Q50	F-3
Q51	G-3
Q52	E-6
Q53	E-7
Q54	E-7
Q55	E-7
Q56	E-7
Q57	E-7
Q58	E-7
Q59	E-9
Q60	E-9
Q61	E-8
Q62	E-8
Q63	I-3
Q64	I-3
Q65	I-3
Q66	I-3
Q67	H-3
Q68	H-3
Q69	F-3
Q70	G-3
Q71	C-5
Q72	D-7
Q73	D-7
Q74	C-7
Q75	D-7
Q76	D-7
Q77	D-7
Q78	D-9
Q79	D-9
Q80	D-8
Q81	D-8
Q82	C-8
Q83	C-8
Q84	C-7
Q85	D-9
Q86	C-9
Q87	C-8
Q88	B-7
Q89	B-6
Q90	A-6
Q91	A-7
Q92	A-6
Q93	A-9
Q94	A-7
Q95	A-8
Q97	A-1
Q100	A-2
Q101	C-8
Q103	I-9
Q104	I-9
Q105	I-8
Q106	I-8
Q107	J-8
Q108	I-7
Q109	K-6
Q110	K-6
Q111	L-7
Q112	L-6
Q113	K-9
Q114	L-8
Q116	L-1
Q119	L-2
Q120	J-8
Q121	J-8
Q122	L-7
Q123	C-8
Q124	J-1
Q125	K-1
Q126	E-9
Q127	E-8
Q128	D-9
Q129	D-9
Q130	A-2
Q131	B-2
Q132	B-4
Q133	B-3
Q134	A-1
Q135	L-5
Q136	K-2
Q137	J-4
Q138	J-3
Q139	L-1
RV1	G-6
RV2	H-8
RV3	I-5
RV4	I-6
RV5	I-7
RV6	I-5
RV7	I-6
RV8	F-6
RV9	H-9
RV10	G-8
RV11	F-9
RV12	G-9
RV13	E-7
RV14	C-7
RV15	C-8
RV16	B-6
RV17	B-7
RV18	B-7
RV19	A-6
RV20	B-4
RV21	B-5
RV22	B-6
RV23	A-7
RV24	A-8
RV25	C-9
RV26	B-7
RV27	B-9
RV28	B-9
RV29	B-4
RV31	J-8
RV32	J-7
RV33	J-7
RV34	K-6
RV35	K-4
RV36	J-5
RV37	J-6
RV38	K-7
RV39	L-8
RV40	J-9
RV41	K-7
RV42	K-9
RV43	K-9
RV44	L-4
RV46	J-6
RV47	J-8
RV48	J-1
RV49	B-4
RV50	B-1
RV51	A-2
RV52	K-4
RV53	K-2
RV54	L-2
S1	C-9
S2	J-9
TH1	B-3
TH2	J-3
TP1	I-2
TP2	I-2
TP3	I-2
TP4	I-5
TP5	I-5
TP6	G-7
TP7	H-7
TP8	H-9
TP9	H-9
TP10	G-7
TP11	G-9
TP12	F-9
TP13	F-7
TP14	E-8
TP15	F-9
TP16	F-9
TP17	F-9
TP18	D-8
TP19	D-9
TP20	E-9
TP21	B-7
TP22	B-7
TP23	B-5
TP24	B-6
TP25	B-5
TP26	A-9
TP27	A-9
TP28	B-1
TP29	B-1
TP30	B-1
TP31	J-8
TP32	J-7
TP33	K-6
TP34	K-5
TP35	K-6
TP36	L-8
TP37	K-9
TP38	K-9
TP39	J-1
TP40	J-1
TP41	C-7
TP42	B-6
TP43	A-8
TP44	J-6
TP45	J-6
TP46	I-6
TP47	B-4
TP48	B-6
TP49	B-7
TP50	B-1
TP51	K-4
TP52	K-7
TP53	J-1
TP54	J-1
TP55	B-4
TP56	J-4
TP57	K-1
TP58	I-9



1-617-833-13

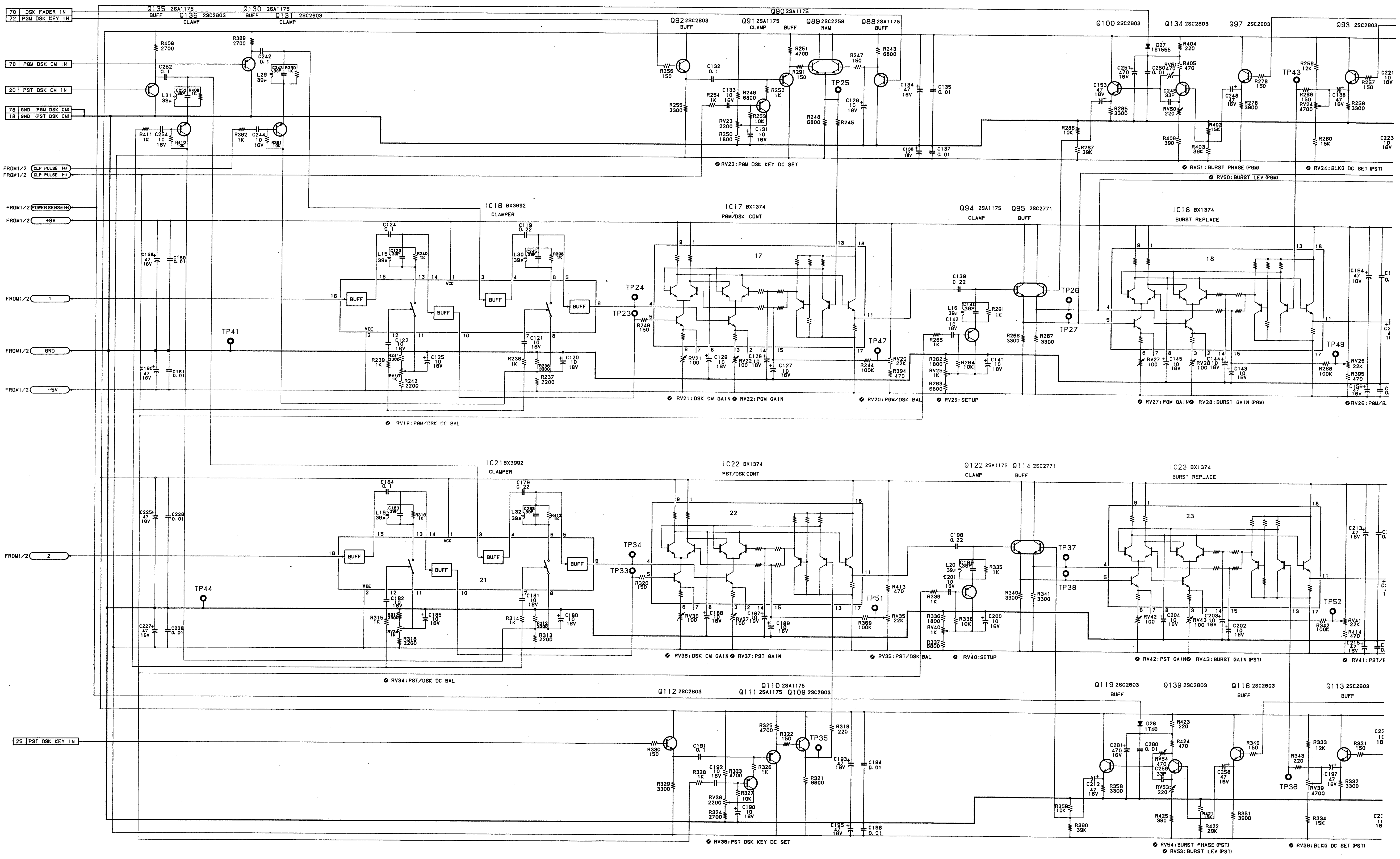
Ser NO. 10051 ~ 10060 (J)
Ser NO. 10206 ~ 10265 (UC)
Ser NO. 10296 ~ 10835 (EK)

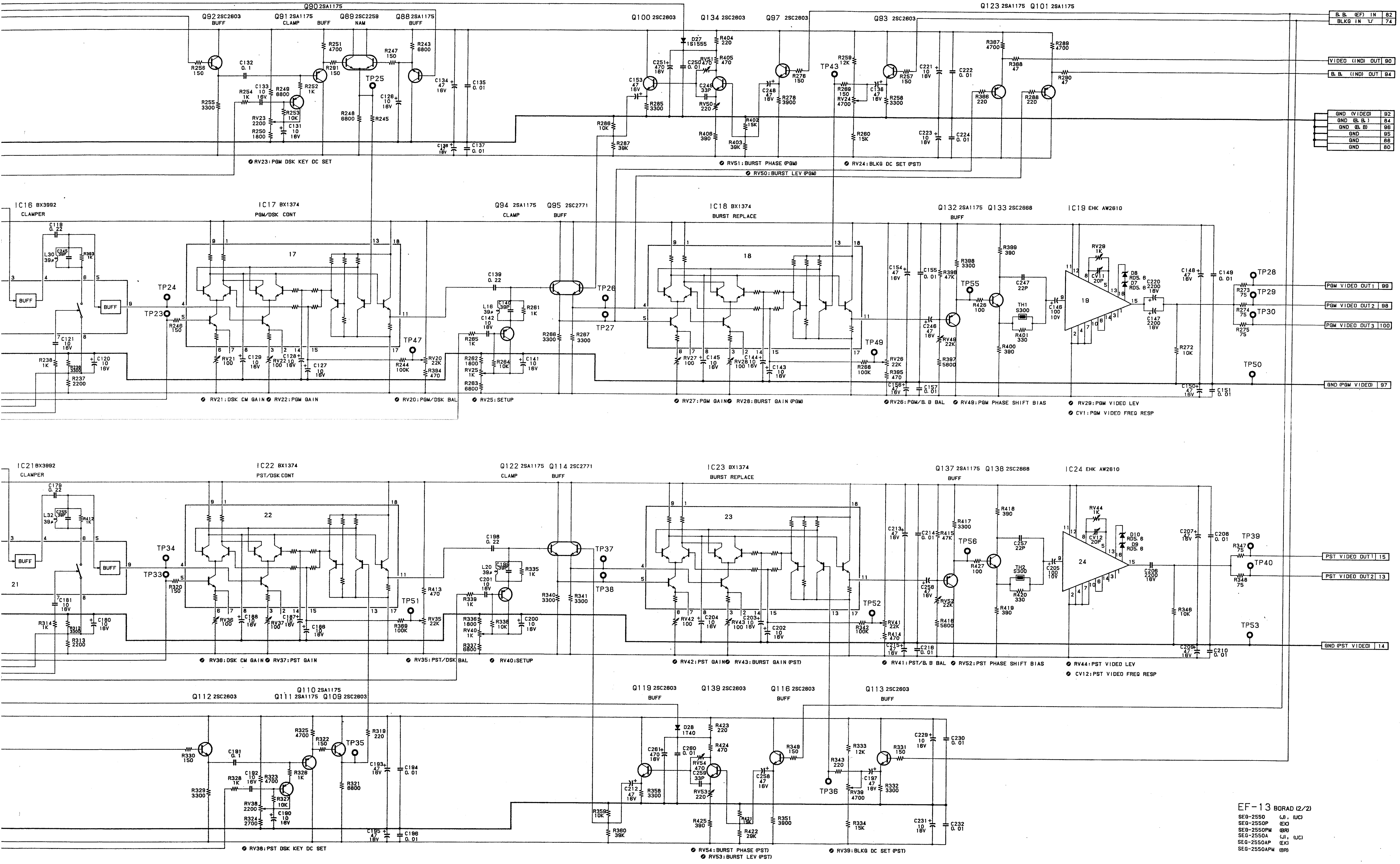


1-617-833-13,14

Ser NO. 10051 ~ 10120 (J)
Ser NO. 10206 ~ 10315 (UC)
Ser NO. 10296 ~ 10535 (EK)
Ser NO. 10006 ~ 10015 (BRZ)

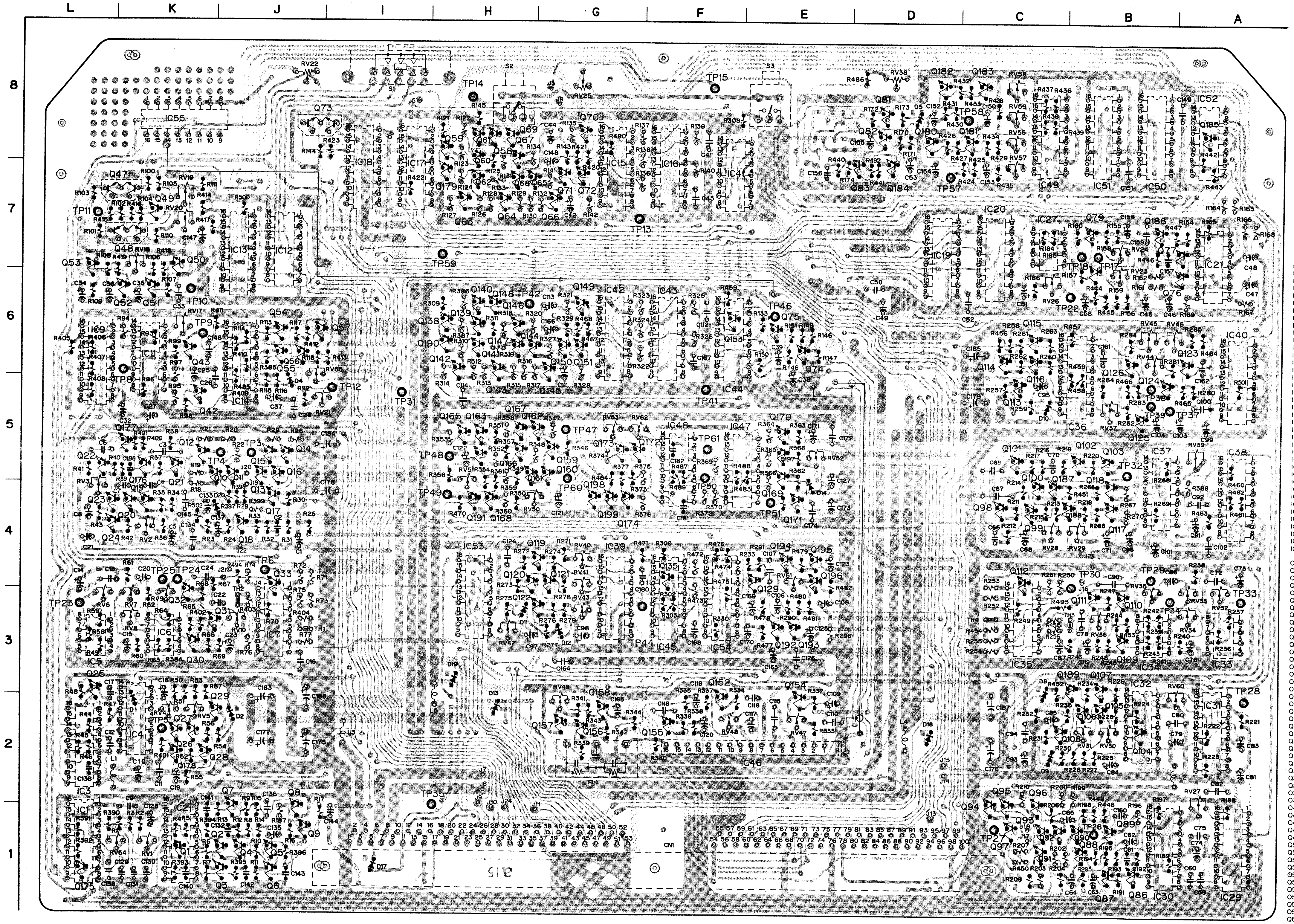
EF-13 (2/2) BOARD


70 DSK FADER IN
72 PGM DSK KEY IN
76 PGM DSK CM IN
20 PST DSK CM IN
78 GND (PGM DSK CM)
18 GND (PST DSK CM)
FROM1/2 CLP PULSE (+)
FROM1/2 CLP PULSE (-)
FROM1/2 POWERSENSE(+)
FROM1/2 +9V
FROM1/2 1
FROM1/2 GND
FROM1/2 -5V
FROM1/2 2
25 PST DSK KEY IN
Q135 2SA1175 BUFF
Q136 2SC2603 CLAMP
Q130 2SA1175 BUFF
Q131 2SC2603 CLAMP
Q90 2SA1175
Q92 2SC2603 BUFF
Q91 2SA1175 CLAMP
BUFF
Q89 2SC2258 NAM
Q88 2SA1175 BUFF
Q100 2SC2603
Q134 2SC2603
Q97 2SC2603
Q93 2SC2603
IC16 BX3692 CLAMPER
IC17 BX1374 PGM/DSK CONT
Q94 2SA1175 CLAMP
Q95 2SC2771 BUFF
IC18 BX1374 BURST REPLACE
IC21 BX3692 CLAMPER
IC22 BX1374 PST/DSK CONT
Q122 2SA1175 CLAMP
Q114 2SC2771 BUFF
IC23 BX1374 BURST REPLACE
Q112 2SC2603
Q110 2SA1175
Q111 2SA1175
Q109 2SC2603
Q119 2SC2603 BUFF
Q139 2SC2603
Q116 2SC2603 BUFF
Q113 2SC2603 BUFF
BUFF
VCC
VEE
TP23
TP24
TP25
TP26
TP27
TP33
TP34
TP35
TP36
TP37
TP38
TP41
TP43
TP44
TP47
TP49
TP51
TP52
D27 1S1555
D28 1T40
RV23: PGM DSK KEY DC SET
RV51: BURST PHASE (PGM)
RV50: BURST LEV (PGM)
RV24: BLKG DC SET (PST)
RV19: PGM/DSK DC BAL
RV21: DSK CM GAIN
RV22: PGM GAIN
RV20: PGM/DSK BAL
RV25: SETUP
RV27: PGM GAIN
RV28: BURST GAIN (PGM)
RV26: PGM/B
RV34: PST/DSK DC BAL
RV36: DSK CM GAIN
RV37: PST GAIN
RV35: PST/DSK BAL
RV40: SETUP
RV42: PST GAIN
RV43: BURST GAIN (PST)
RV41: PST/
RV38: PST DSK KEY DC SET
RV54: BURST PHASE (PST)
RV53: BURST LEV (PST)
RV39: BLKG DC SET (PST)
17
18
21
22
23


Q90 2SA1175
Q92 2SC2603 BUFF
Q91 2SA1175 CLAMP
BUFF
Q89 2SC2258 NAM
Q88 2SA1175 BUFF
TP25
RV23:PGM DSK KEY DC SET
Q100 2SC2603
Q134 2SC2603
Q97 2SC2603
Q93 2SC2603
Q123 2SA1175
Q101 2SA1175
D27 1S1555
TP43
RV51:BURST PHASE (PGM)
RV50:BURST LEV (PGM)
RV24:BLKG DC SET (PST)
B. B. (EF) IN 82
BLKG IN 74
VIDEO (IND) OUT 90
B. B. (IND) OUT 94
GND (VIDEO) 92
GND (B. B.) 84
GND (B. B) 96
GND 95
GND 88
GND 80
IC16 BX3992 CLAMPER
BUFF
IC17 BX1374 PGM/DSK CONT
TP24
TP23
TP47
RV21:DSK CM GAIN
RV22:PGM GAIN
RV20:PGM/DSK BAL
Q94 2SA1175 CLAMP
Q95 2SC2771 BUFF
TP26
TP27
RV25:SETUP
IC18 BX1374 BURST REPLACE
TP49
RV27:PGM GAIN
RV28:BURST GAIN (PGM)
Q132 2SA1175
Q133 2SC2668 BUFF
TP55
TH1 S300
IC19 EHK AW2810
TP28
TP29
TP30
TP50
PGM VIDEO OUT1 99
PGM VIDEO OUT2 98
PGM VIDEO OUT3 100
GND (PGM VIDEO) 97
RV26:PGM/B. B BAL
RV49:PGM PHASE SHIFT BIAS
RV29:PGM VIDEO LEV
CV1:PGM VIDEO FREQ RESP
IC21 BX3992 CLAMPER
IC22 BX1374 PST/DSK CONT
TP34
TP33
TP51
RV36:DSK CM GAIN
RV37:PST GAIN
RV35:PST/DSK BAL
Q122 2SA1175 CLAMP
Q114 2SC2771 BUFF
TP37
TP38
RV40:SETUP
IC23 BX1374 BURST REPLACE
TP52
RV42:PST GAIN
RV43:BURST GAIN (PST)
Q137 2SA1175
Q138 2SC2668 BUFF
TP56
TH2 S300
IC24 EHK AW2810
TP39
TP40
TP53
PST VIDEO OUT1 15
PST VIDEO OUT2 13
GND (PST VIDEO) 14
RV41:PST/B. B BAL
RV52:PST PHASE SHIFT BIAS
RV44:PST VIDEO LEV
CV12:PST VIDEO FREQ RESP
Q112 2SC2603
Q110 2SA1175
Q111 2SA1175
Q109 2SC2603
TP35
RV38:PST DSK KEY DC SET
Q119 2SC2603 BUFF
Q139 2SC2603
Q116 2SC2603 BUFF
Q113 2SC2603 BUFF
D28 1T40
TP36
RV54:BURST PHASE (PST)
RV53:BURST LEV (PST)
RV39:BLKG DC SET (PST)

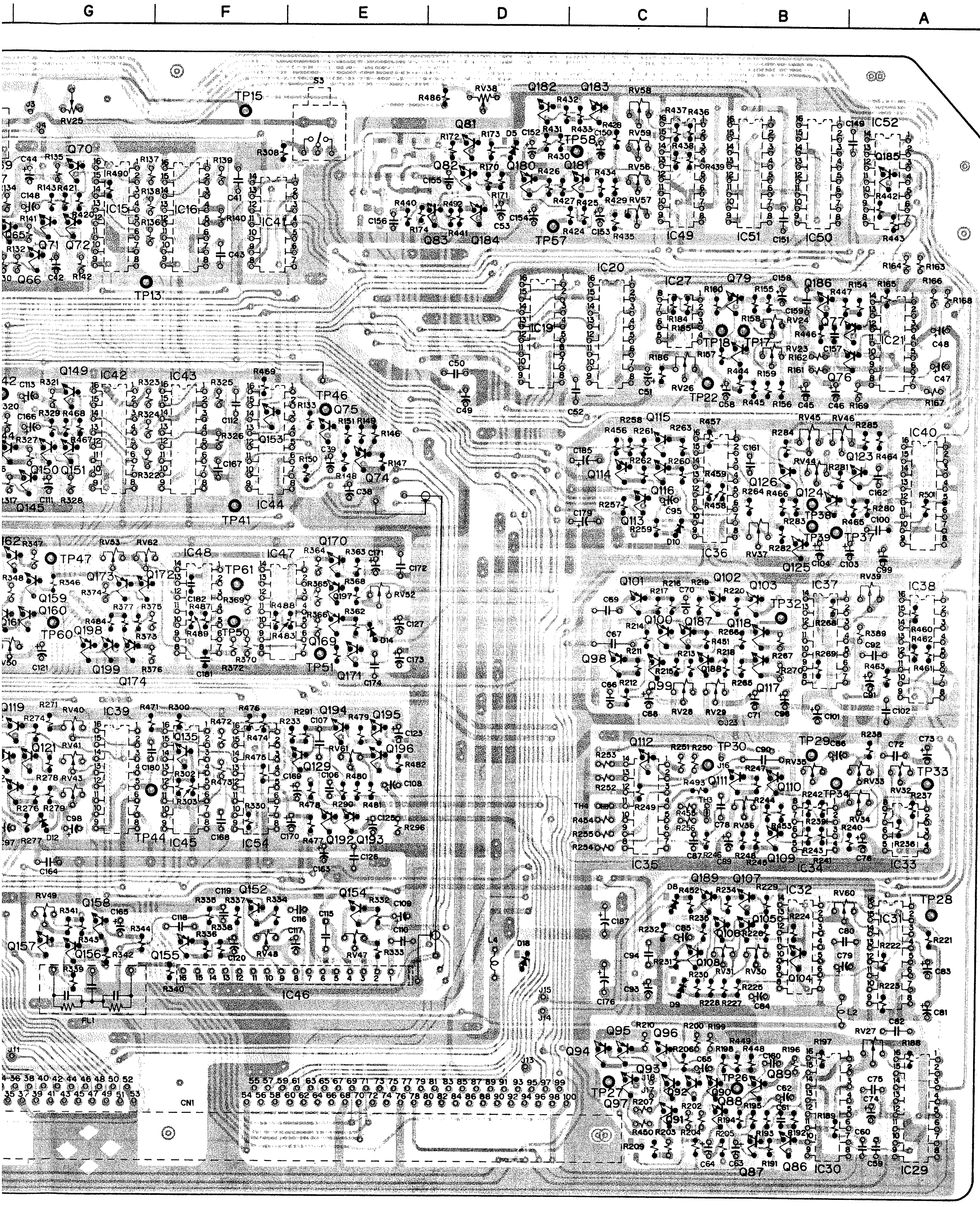
EF-13 BORAD (2/2)
SEG-2550 (J), (UC)
SEG-2550P (EK)
SEG-2550PM (BR)
SEG-2550A (J), (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

WP-20 BOARD
SOLDERING SIDE



WP-20BOARD
-SOLDERING SIDE-
1-621-324-11
SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

CN1	F-1
D1	K-2
D2	J-2
D4	J-5
D5	D-8
D8	C-3
D9	C-2
D10	C-5
D11	H-3
D12	G-3
D13	H-2
D14	E-5
D17	I-1
D18	D-2
D19	H-3
D20	J-4
FL1	G-2
IC1	L-1
IC2	K-1
IC3	L-2
IC4	K-2
IC5	L-3
IC6	K-3
IC7	J-3
IC9	L-6
IC11	K-6
IC12	J-7
IC13	J-7
IC14	J-6
IC15	G-8
IC16	F-7
IC17	I-8
IC18	I-8
IC19	D-7
IC20	C-7
IC21	A-7
IC27	C-7
IC29	A-1
IC30	B-1
IC31	A-1
IC32	B-2
IC33	A-3
IC34	B-3
IC35	C-3
IC36	B-6
IC37	B-4
IC38	A-4
IC39	G-4
IC40	A-6
IC41	F-7
IC42	G-6
IC43	F-6
IC44	F-6
IC45	F-3
IC46	E-2
IC47	E-5
IC48	F-5
IC49	C-8
IC50	B-8
IC51	B-8
IC52	A-8
IC53	H-3
IC54	F-3
IC55	K-8
Q1	K-1
Q2	J-1
Q3	J-1
Q4	J-1
Q5	J-1
Q6	J-1
Q7	J-2
Q8	J-2
Q9	J-1
Q10	K-5
Q11	J-5
Q12	K-5
Q13	J-5
Q14	J-5
Q15	J-5
Q16	J-5
Q17	J-4
Q18	J-4
Q19	K-4
Q20	K-4
Q21	K-5
Q22	L-5
Q23	L-4
Q24	L-4
Q25	L-3
Q26	K-2
Q27	K-2
Q28	K-2
Q29	K-2
Q30	K-3
Q31	K-3
Q32	K-3
Q33	J-4
Q42	K-5
Q43	K-6
Q47	K-7
Q48	K-7
Q49	K-7
Q50	K-7
Q51	K-6
Q52	K-6
Q53	L-7
Q54	J-6
Q55	J-6
Q56	J-6
Q57	J-6
Q58	H-8
Q59	H-8
Q60	H-8
Q61	H-8
Q62	H-7
Q63	H-7
Q64	H-7
Q65	H-7
Q66	G-7
Q67	H-8
Q68	H-7
Q69	H-8
Q70	G-8
Q71	G-7
Q72	G-8
Q73	J-8
Q74	E-6
Q75	E-6
Q76	A-7
Q77	A-7
Q78	B-7
Q79	B-7
Q81	D-8
Q82	D-8
Q83	D-8
Q86	B-1
Q87	B-1
Q88	B-1
Q89	B-1
Q90	B-1
Q91	C-1
Q92	C-1
Q93	C-1
Q94	C-2
Q95	C-2
Q96	C-2
Q97	C-1
Q98	C-4
Q99	C-4
Q100	C-5
Q101	C-5
Q102	B-5
Q103	B-5
Q104	B-2
Q105	B-2
Q106	B-2
Q107	B-3
Q108	C-2
Q109	B-3
Q110	B-3
Q111	B-3
Q112	C-4
Q113	C-5
Q114	C-6
Q115	C-6
Q116	C-6
Q117	B-4
Q118	B-5
Q119	G-4
Q120	H-4
Q121	G-4
Q122	G-3
Q123	A-6
Q124	B-5
Q125	B-5
Q126	B-6
Q129	E-4
Q135	F-4
Q138	H-6
Q139	H-6
Q140	H-6
Q141	H-6
Q142	H-6
Q143	H-6
Q144	H-6
Q145	G-6
Q146	H-6
Q147	H-6
Q148	H-6
Q149	G-6
Q150	G-6
Q151	G-6
Q152	F-2
Q153	F-6
Q154	E-3
Q155	F-2
Q156	G-2
Q157	G-2
Q158	G-2
Q159	G-5
Q160	G-5
Q161	H-5
Q162	G-5
Q163	H-5
Q164	H-5
Q165	H-5
Q166	H-5
Q167	H-5
Q168	H-4
Q169	E-5
Q170	E-5
Q171	E-4
Q172	G-5
Q173	G-5
Q174	G-4
Q175	L-1
Q176	K-6
Q177	K-6
Q178	K-2
Q179	H-7
Q180	D-8
Q181	C-8
Q182	D-8
Q183	C-8
Q184	D-8
Q185	A-8
Q186	B-7
Q187	C-5
Q188	B-4
Q189	B-3
Q190	H-6
Q191	H-4
Q192	E-3
Q193	E-3
Q194	E-4
Q195	E-4
Q196	E-4
Q197	E-5
Q198	G-4
Q199	G-4
RV1	K-1
RV2	K-4
RV3	L-4
RV4	K-2
RV5	K-2
RV6	L-3
RV7	K-3
RV8	K-3
RV9	K-3
RV10	J-3
RV17	K-6
RV18	K-7
RV19	K-7
RV20	K-7
RV21	I-5
RV22	J-8
RV23	B-7
RV24	B-7
RV25	G-8
RV26	C-6
RV27	A-2
RV28	C-4
RV29	B-4
RV30	B-2
RV31	B-2
RV32	A-4
RV33	A-4
RV34	A-3
RV35	B-4
RV36	B-3
RV37	B-5
RV38	D-8
RV39	A-5
RV40	G-4
RV41	G-4
RV42	H-3
RV43	G-3
RV44	B-6
RV45	B-6
RV46	B-6
RV47	E-2
RV48	F-2
RV49	G-2
RV50	G-4
RV51	H-5
RV52	E-5
RV53	G-5
RV54	K-1
RV55	J-6
RV56	C-8
RV57	C-8
RV58	C-8
RV59	C-8
RV60	A-3
RV61	E-4
RV62	G-5
S1	I-8
S2	H-8
S3	E-8
TH1	J-3
TH2	J-3
TH3	C-3
TH4	C-3
TP3	J-5
TP4	J-5
TP5	K-2
TP6	J-4
TP8	K-6
TP9	K-6
TP10	K-6
TP11	I-7
TP12	I-5
TP13	G-7
TP14	H-8
TP15	F-8
TP17	B-7
TP18	B-7
TP22	B-6
TP23	L-5
TP24	K-4
TP25	K-4
TP26	B-1
TP27	C-1
TP28	A-3
TP29	B-4
TP30	B-4
TP31	I-5
TP32	B-5
TP33	A-3
TP34	A-3
TP35	H-2
TP37	B-5
TP38	B-5
TP39	B-5
TP41	F-5
TP42	H-6
TP44	F-3
TP46	E-6
TP47	G-5
TP48	H-5
TP49	H-4
TP50	F-5
TP51	E-4
TP57	D-7
TP58	C-8
TP59	H-7
TP60	G-5
TP61	F-5


G
F
E
D
C
B
A
IC15
IC16
IC41
IC49
IC51
IC50
IC52
IC20
IC27
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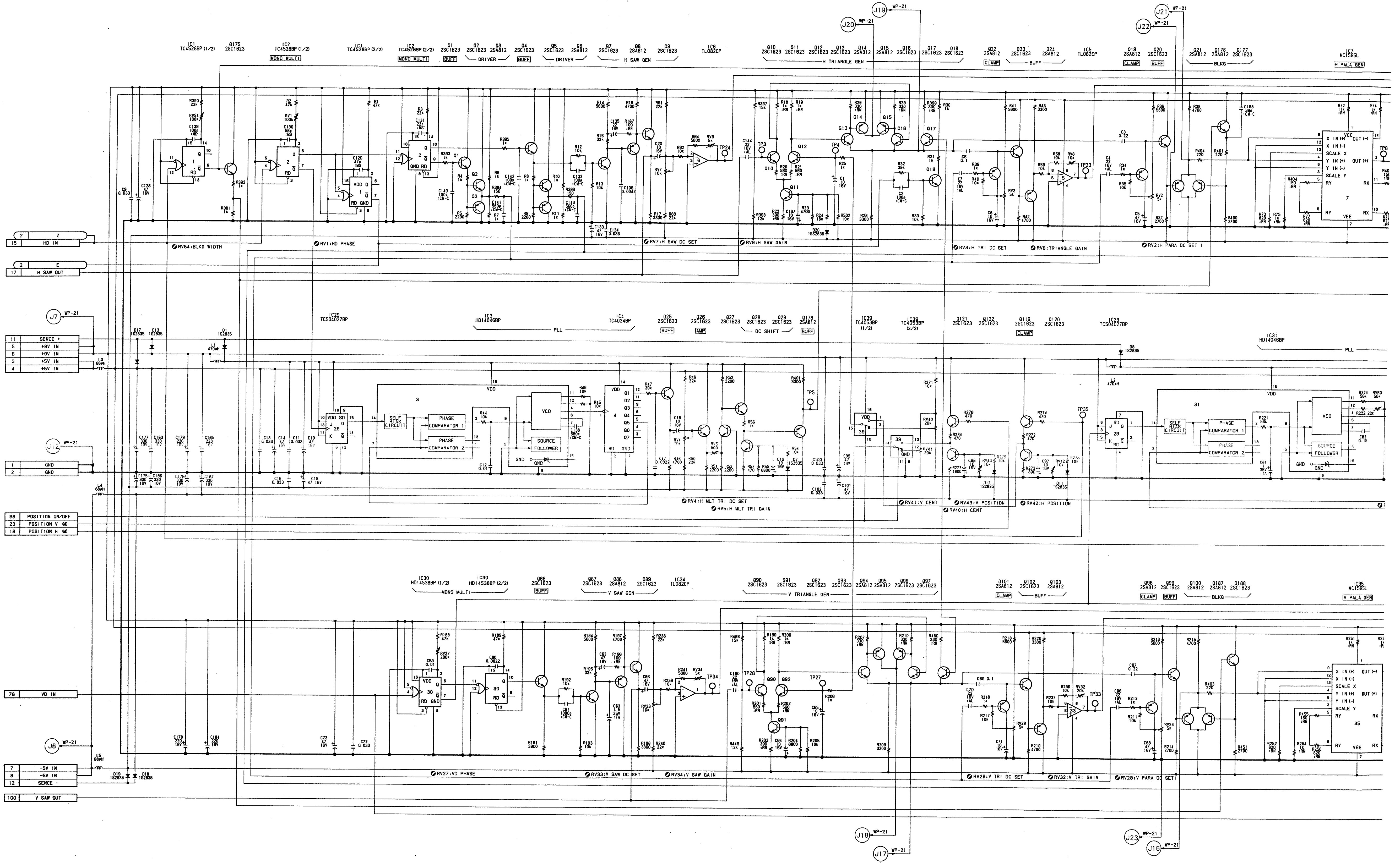
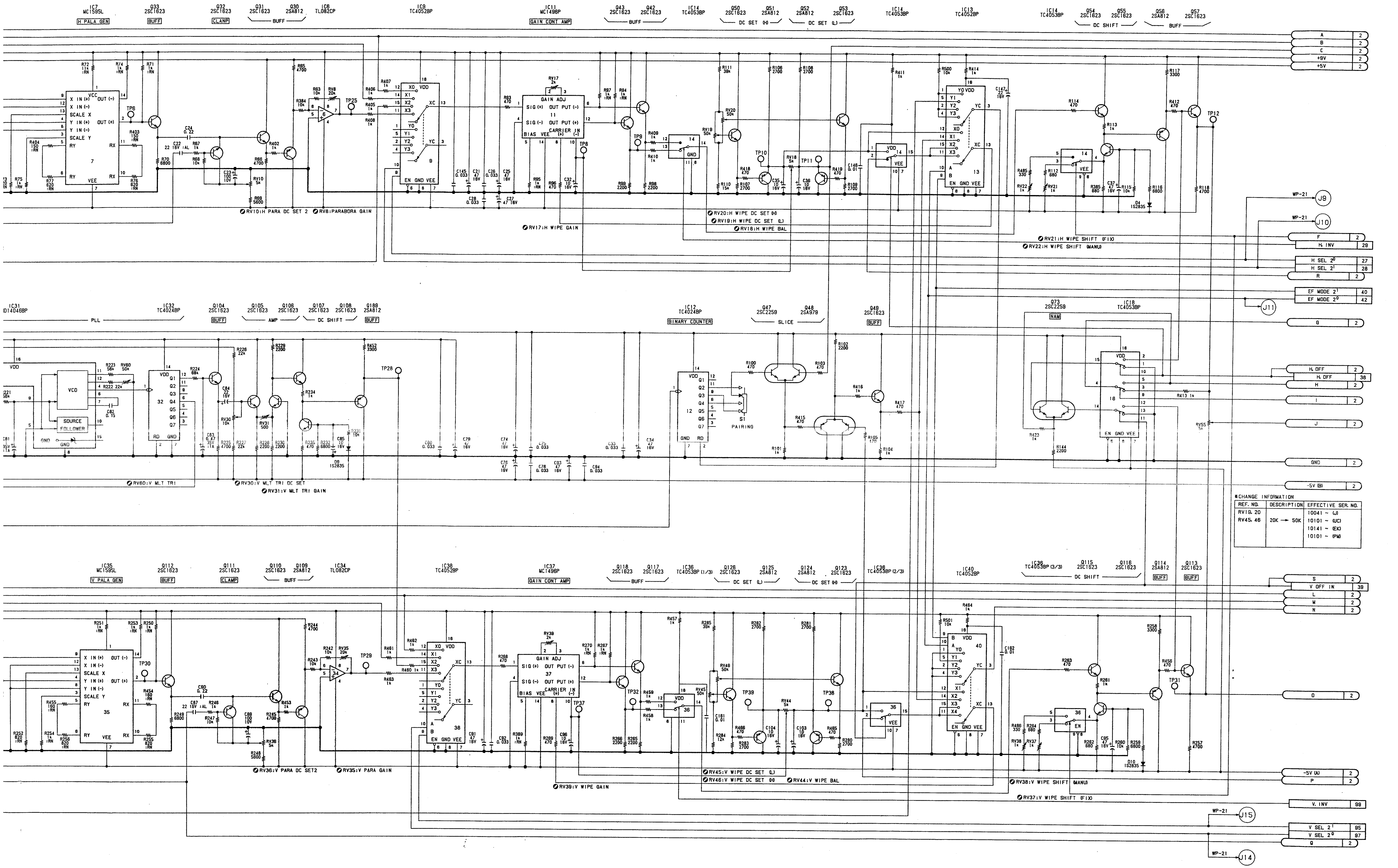
IC21
IC42
IC43
IC44
IC40
IC36
IC48
IC47
IC37
IC38
IC39
IC45
IC54
IC35
IC34
IC33
IC32
IC31
IC46
IC30
IC29
CN1
FL1
TP13
TP15
TP41
TP46
TP47
TP50
TP51
TP57
TP58
TP60
TP61
TP44
TP18
TP17
TP22
TP28
TP29
TP30
TP32
TP33
TP37
TP38
TP26
TP27

WP-20 BOARD
-SOLDERING SIDE-
1-621-324-11
SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

CN1	F-1
D1	K-2
D2	J-2
D4	J-5
D5	D-8
D8	C-3
D9	C-2
D10	C-5
D11	H-3
D12	G-3
D13	H-2
D14	E-5
D17	I-1
D18	D-2
D19	H-3
D20	J-4
FL1	G-2
IC1	L-1
IC2	K-1
IC3	L-2
IC4	K-2
IC5	L-3
IC6	K-3
IC7	J-3
IC9	L-6
IC11	K-6
IC12	J-7
IC13	J-7
IC14	J-6
IC15	G-8
IC16	F-7
IC17	I-8
IC18	I-8
IC19	D-7
IC20	C-7
IC21	A-7
IC27	C-7
IC29	A-1
IC30	B-1
IC31	A-1
IC32	B-2
IC33	A-3
IC34	B-3
IC35	C-3
IC36	B-6
IC37	B-4
IC38	A-4
IC39	G-4
IC40	A-6
IC41	F-7
IC42	G-6
IC43	F-6
IC44	F-6
IC45	F-3
IC46	E-2
IC47	E-5
IC48	F-5
IC49	C-8
IC50	B-8
IC51	B-8
IC52	A-8
IC53	H-3
IC54	F-3
IC55	K-8
Q1	K-1
Q2	J-1
Q3	J-1
Q4	J-1
Q5	J-1
Q6	J-1
Q7	J-2
Q8	J-2
Q9	J-1
Q10	K-5
Q11	J-5
Q12	K-5
Q13	J-5
Q14	J-5
Q15	J-5
Q16	J-5
Q17	J-4
Q18	J-4
Q19	K-4
Q20	K-4
Q21	K-5
Q22	L-5
Q23	L-4
Q24	L-4
Q25	L-3
Q26	K-2
Q27	K-2
Q28	K-2
Q29	K-2
Q30	K-3
Q31	K-3
Q32	K-3
Q33	J-4
Q42	K-5
Q43	K-6
Q47	K-7
Q48	K-7
Q49	K-7
Q50	K-7
Q51	K-6
Q52	K-6
Q53	L-7
Q54	J-6
Q55	J-6
Q56	J-6
Q57	J-6
Q58	H-8
Q59	H-8
Q60	H-8
Q61	H-8
Q62	H-7
Q63	H-7
Q64	H-7
Q65	H-7
Q66	G-7
Q67	H-8
Q68	H-7
Q69	H-8
Q70	G-8
Q71	G-7
Q72	G-8
Q73	J-8
Q74	E-6
Q75	E-6
Q76	A-7
Q77	A-7
Q78	B-7
Q79	B-7
Q81	D-8
Q82	D-8
Q83	D-8
Q86	B-1
Q87	B-1
Q88	B-1
Q89	B-1
Q90	B-1
Q91	C-1
Q92	C-1
Q93	C-1
Q94	C-2
Q95	C-2
Q96	C-2
Q97	C-1
Q98	C-4
Q99	C-4
Q100	C-5
Q101	C-5
Q102	B-5
Q103	B-5
Q104	B-2
Q105	B-2
Q106	B-2
Q107	B-3
Q108	C-2
Q109	B-3
Q110	B-3
Q111	B-3
Q112	C-4
Q113	C-5
Q114	C-6
Q115	C-6
Q116	C-6
Q117	B-4
Q118	B-5
Q119	G-4
Q120	H-4
Q121	G-4
Q122	G-3
Q123	A-6
Q124	B-5
Q125	B-5
Q126	B-6
Q129	E-4
Q135	F-4
Q138	H-6
Q139	H-6
Q140	H-6
Q141	H-6
Q142	H-6
Q143	H-6
Q144	H-6
Q145	G-6
Q146	H-6
Q147	H-6
Q148	H-6
Q149	G-6
Q150	G-6
Q151	G-6
Q152	F-2
Q153	F-6
Q154	E-3
Q155	F-2
Q156	G-2
Q157	G-2
Q158	G-2
Q159	G-5
Q160	G-5
Q161	H-5
Q162	G-5
Q163	H-5
Q164	H-5
Q165	H-5
Q166	H-5
Q167	H-5
Q168	H-4
Q169	E-5
Q170	E-5
Q171	E-4
Q172	G-5
Q173	G-5
Q174	G-4
Q175	L-1
Q176	K-6
Q177	K-6
Q178	K-2
Q179	H-7
Q180	D-8
Q181	C-8
Q182	D-8
Q183	C-8
Q184	D-8
Q185	A-8
Q186	B-7
Q187	C-5
Q188	B-4
Q189	B-3
Q190	H-6
Q191	H-4
Q192	E-3
Q193	E-3
Q194	E-4
Q195	E-4
Q196	E-4
Q197	E-5
Q198	G-4
Q199	G-4
RV1	K-1
RV2	K-4
RV3	L-4
RV4	K-2
RV5	K-2
RV6	L-3
RV7	K-3
RV8	K-3
RV9	K-3
RV10	J-3
RV17	K-6
RV18	K-7
RV19	K-7
RV20	K-7
RV21	I-5
RV22	J-8
RV23	B-7
RV24	B-7
RV25	G-8
RV26	C-6
RV27	A-2
RV28	C-4
RV29	B-4
RV30	B-2
RV31	B-2
RV32	A-4
RV33	A-4
RV34	A-3
RV35	B-4
RV36	B-3
RV37	B-5
RV38	D-8
RV39	A-5
RV40	G-4
RV41	G-4
RV42	H-3
RV43	G-3
RV44	B-6
RV45	B-6
RV46	B-6
RV47	E-2
RV48	F-2
RV49	G-2
RV50	G-4
RV51	H-5
RV52	E-5
RV53	G-5
RV54	K-1
RV55	J-6
RV56	C-8
RV57	C-8
RV58	C-8
RV59	C-8
RV60	A-3
RV61	E-4
RV62	G-5
S1	I-8
S2	H-8
S3	E-8
TH1	J-3
TH2	J-3
TH3	C-3
TH4	C-3
TP3	J-5
TP4	J-5
TP5	K-2
TP6	J-4
TP8	K-6
TP9	K-6
TP10	K-6
TP11	L-7
TP12	I-5
TP13	G-7
TP14	H-8
TP15	F-8
TP17	B-7
TP18	B-7
TP22	B-6
TP23	L-5
TP24	K-4
TP25	K-4
TP26	B-1
TP27	C-1
TP28	A-3
TP29	B-4
TP30	B-4
TP31	I-5
TP32	B-5
TP33	A-3
TP34	A-3
TP35	H-2
TP37	B-5
TP38	B-5
TP39	B-5
TP41	F-5
TP42	H-6
TP44	F-3
TP46	E-6
TP47	G-5
TP48	H-5
TP49	H-4
TP50	F-5
TP51	E-4
TP57	D-7
TP58	C-8
TP59	H-7
TP60	G-5
TP61	F-5

WP-20 (1/2) BOARD


Z
HD IN
E
H SAW OUT
SENCE +
+9V IN
+5V IN
GND
POSITION ON/OFF
POSITION V
POSITION H
VD IN
-5V IN
SENCE -
V SAW OUT
IC1 TC4528BP (1/2)
IC2 TC4528BP (1/2)
MONO MULTI
IC6 TL082CP
H SAW GEN
H TRIANGLE GEN
IC5 TL082CP
CLAMP
BUFF
BLKG
IC7 MC1595L
H PALA GEN
DRIVER
IC28 TC5040278P
IC3 HD14046BP
PLL
IC4 TC4024BP
DC SHIFT
IC39 TC4053BP
IC29 TC5040278P
IC31 HD14046BP
SELF BIAS CIRCUIT
PHASE COMPARATOR 1
PHASE COMPARATOR 2
VCO
SOURCE FOLLOWER
IC30 HD14538BP
V SAW GEN
IC34 TL082CP
V TRIANGLE GEN
IC35 MC1595L
V PALA GEN
RV54:BLKG WIDTH
RV1:HD PHASE
RV7:H SAW DC SET
RV9:H SAW GAIN
RV3:H TRI DC SET
RV6:TRIANGLE GAIN
RV2:H PARA DC SET
RV4:H MLT TRI DC SET
RV5:H MLT TRI GAIN
RV41:V CENT
RV40:H CENT
RV43:V POSITION
RV42:H POSITION
RV27:VD PHASE
RV33:V SAW DC SET
RV34:V SAW GAIN
RV29:V TRI DC SET
RV32:V TRI GAIN
RV28:V PARA DC SET
WP-21
J7
J8
J12
J16
J17
J18
J19
J20
J21
J22
J23

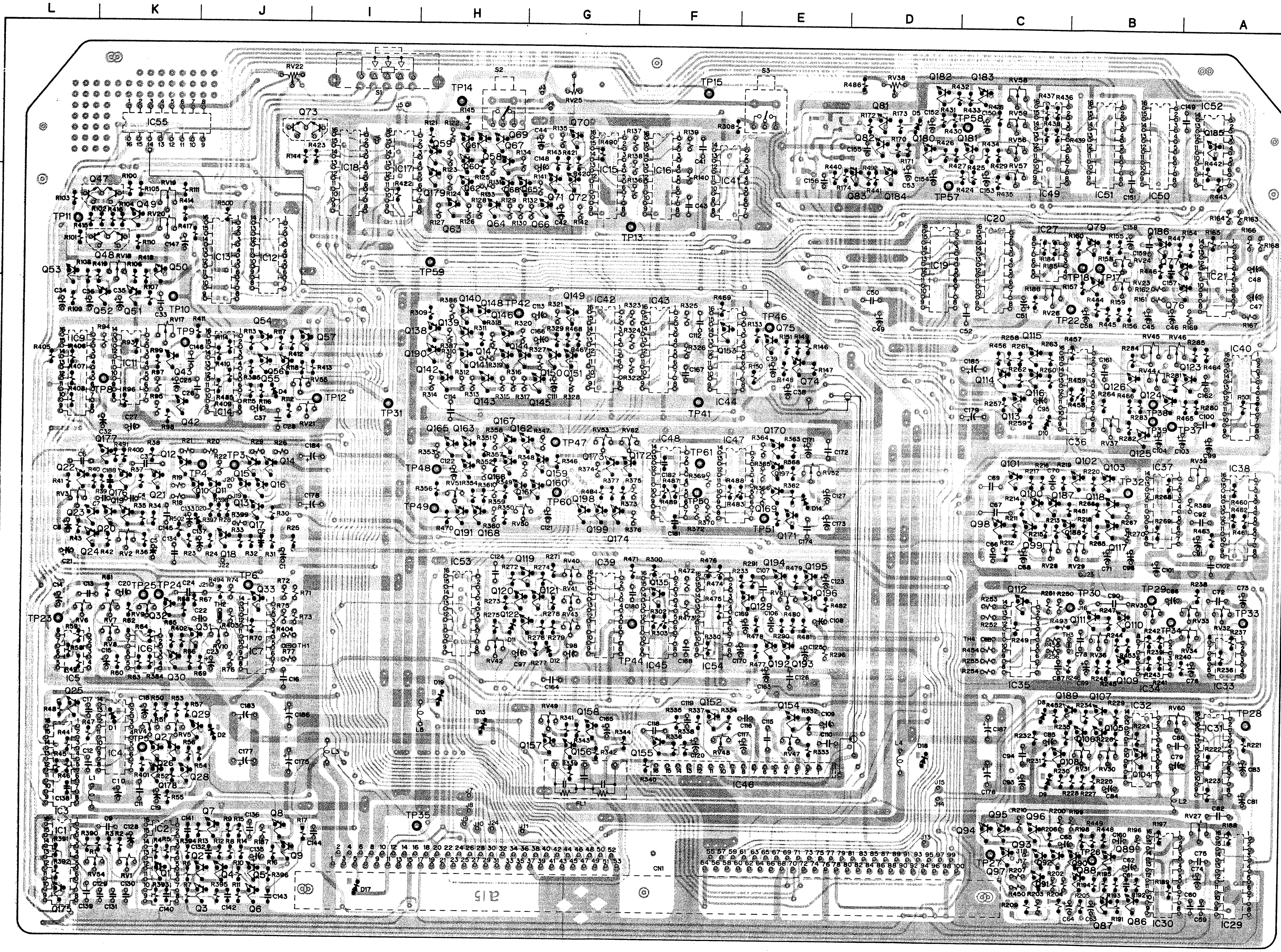

IC7 MC1595L H PALA GEN
Q33 2SC1623 BUFF
Q32 2SC1623 CLAMP
Q31 2SC1623
Q30 2SA812
BUFF
IC6 TL082CP
IC8 TC4052BP
IC11 MC1496P GAIN CONT AMP
Q43 2SC1623
Q42 2SC1623
BUFF
IC14 TC4053BP
Q50 2SC1623
Q51 2SA812
DC SET (H)
Q52 2SA812
Q53 2SC1623
DC SET (L)
IC14 TC4053BP
IC13 TC4052BP
IC14 TC4053BP
Q54 2SC1623
Q55 2SC1623
DC SHIFT
Q56 2SA812
Q57 2SC1623
BUFF
RV10:H PARA DC SET 2
RV8:PARABORA GAIN
RV17:H WIPE GAIN
RV20:H WIPE DC SET (H)
RV19:H WIPE DC SET (L)
RV18:H WIPE BAL
RV21:H WIPE SHIFT (FIX)
RV22:H WIPE SHIFT (MANU)
IC31 TC4046BP
PLL
IC32 TC4024BP
Q104 2SC1623 BUFF
Q105 2SC1623
Q106 2SC1623
AMP
Q107 2SC1623
Q108 2SC1623
DC SHIFT
Q180 2SA812 BUFF
VCO
SOURCE FOLLOWER
RV60:V MLT TRI
RV30:V MLT TRI DC SET
RV31:V MLT TRI GAIN
IC12 TC4024BP BINARY COUNTER
S1 PAIRING
Q47 2SC2259
Q48 2SA979
SLICE
Q49 2SC1623 BUFF
Q73 2SC2258 NAM
IC18 TC4053BP
IC35 MC1595L V PALA GEN
Q112 2SC1623 BUFF
Q111 2SC1623 CLAMP
Q110 2SC1623
Q109 2SA812
BUFF
IC34 TL082CP
IC38 TC4052BP
IC37 MC1496P GAIN CONT AMP
Q118 2SC1623
Q117 2SC1623
BUFF
IC36 TC4053BP (1/3)
Q128 2SC1623
Q125 2SA812
DC SET (L)
Q124 2SA812
Q123 2SC1623
DC SET (H)
IC36 TC4053BP (2/3)
IC40 TC4052BP
IC36 TC4053BP (3/3)
Q115 2SC1623
Q116 2SC1623
DC SHIFT
Q114 2SA812 BUFF
Q113 2SC1623 BUFF
RV36:V PARA DC SET2
RV35:V PARA GAIN
RV39:V WIPE GAIN
RV45:V WIPE DC SET (L)
RV46:V WIPE DC SET (H)
RV44:V WIPE BAL
RV38:V WIPE SHIFT (MANU)
RV37:V WIPE SHIFT (FIX)
A 2
B 2
C 2
+9V 2
+5V 2
WP-21 J9
WP-21 J10
F 2
H. INV 29
H SEL 2² 27
H SEL 2¹ 28
R 2
EF MODE 2¹ 40
EF MODE 2⁰ 42
J11
G 2
H. OFF 2
H. OFF 38
H 2
I 2
J 2
GND 2
-5V (B) 2
S 2
V OFF IN 39
L 2
M 2
N 2
O 2
-5V (A) 2
P 2
V. INV 99
WP-21 J15
V SEL 2¹ 95
V SEL 2⁰ 97
Q 2
WP-21 J14

※CHANGE INFORMATION

REF. NO.	DESCRIPTION	EFFECTIVE SER. NO.
RV19, 20 RV45, 46	20K → 50K	10041 ~ (J) 10101 ~ (UC) 10141 ~ (EK) 10101 ~ (PM)

WP-20 BOARD (1/2)
SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

WP-20 BOARD
SOLDERING SIDE



WP-20 BOARD
-SOLDERING SIDE-
1-621-324-11
SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

CN1	F-1
D1	K-2
D2	J-2
D4	J-5
D5	D-8
D8	C-3
D9	C-2
D10	C-5
D11	H-3
D12	G-3
D13	H-2
D14	E-5
D17	I-1
D18	D-2
D19	H-3
D20	J-4
FL1	G-2
IC1	L-1
IC2	K-1
IC3	L-2
IC4	K-2
IC5	L-3
IC6	K-3
IC7	J-3
IC9	L-6
IC11	K-6
IC12	J-7
IC13	J-7
IC14	J-6
IC15	G-8
IC16	F-7
IC17	I-8
IC18	I-8
IC19	D-7
IC20	C-7
IC21	A-7
IC27	C-7
IC29	A-1
IC30	B-1
IC31	A-1
IC32	B-2
IC33	A-3
IC34	B-3
IC35	C-3
IC36	B-6
IC37	B-4
IC38	A-4
IC39	G-4
IC40	A-6
IC41	F-7
IC42	G-6
IC43	F-6
IC44	F-6
IC45	F-3
IC46	E-2
IC47	E-5
IC48	F-5
IC49	C-8
IC50	B-8
IC51	B-8
IC52	A-8
IC53	H-3
IC54	F-3
IC55	K-8
Q1	K-1
Q2	J-1
Q3	J-1
Q4	J-1
Q5	J-1
Q6	J-1
Q7	J-2
Q8	J-2
Q9	J-1
Q10	K-5
Q11	J-5
Q12	K-5
Q13	J-5
Q14	J-5
Q15	J-5
Q16	J-5
Q17	J-4
Q18	J-4
Q19	K-4
Q20	K-4
Q21	K-5
Q22	L-5
Q23	L-4
Q24	L-4
Q25	L-3
Q26	K-2
Q27	K-2
Q28	K-2
Q29	K-2
Q30	K-3
Q31	K-3
Q32	K-3
Q33	J-4
Q42	K-5
Q43	K-6
Q47	K-7
Q48	K-7
Q49	K-7
Q50	K-7
Q51	K-6
Q52	K-6
Q53	L-7
Q54	J-6
Q55	J-6
Q56	J-6
Q57	J-6
Q58	H-8
Q59	H-8
Q60	H-8
Q61	H-8
Q62	H-7
Q63	H-7
Q64	H-7
Q65	H-7
Q66	G-7
Q67	H-8
Q68	H-7
Q69	H-8
Q70	G-8
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Q73	J-8
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Q77	A-7
Q78	B-7
Q79	B-7
Q81	D-8
Q82	D-8
Q83	D-8
Q86	B-1
Q87	B-1
Q88	B-1
Q89	B-1
Q90	B-1
Q91	C-1
Q92	C-1
Q93	C-1
Q94	C-2
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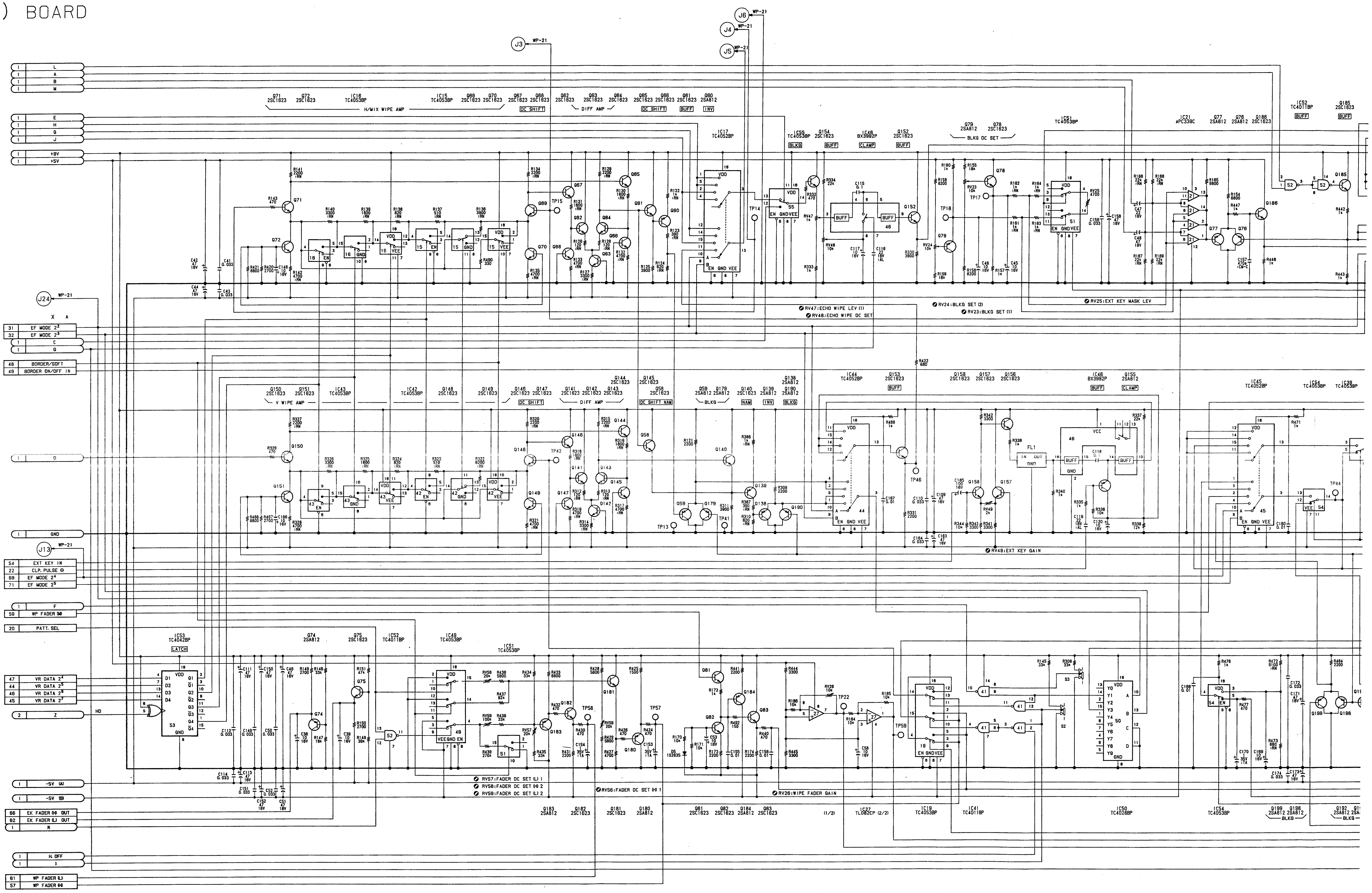
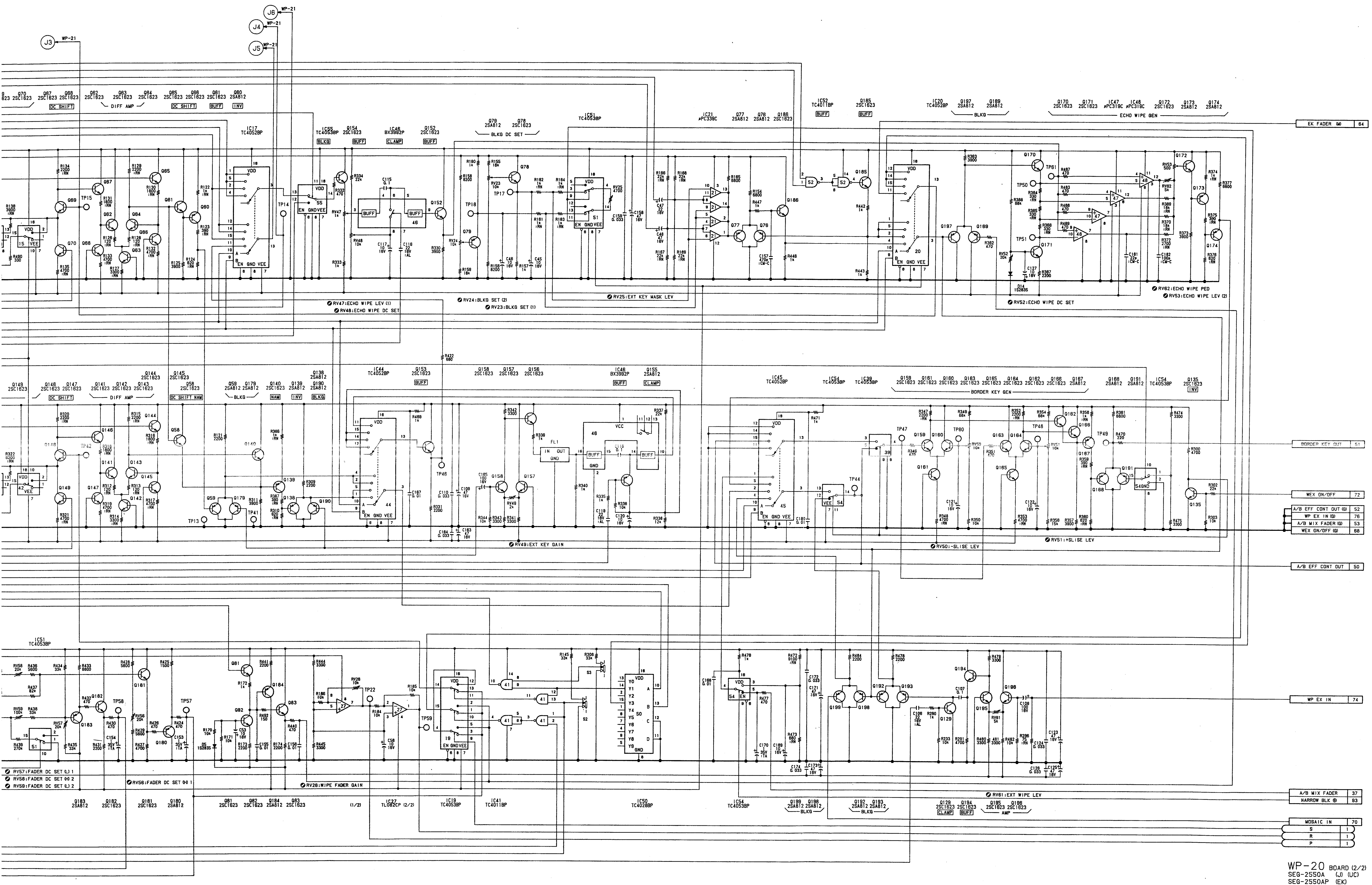
Q101	C-5
Q102	B-5
Q103	B-5
Q104	B-2
Q105	B-2
Q106	B-2
Q107	B-3
Q108	C-2
Q109	B-3
Q110	B-3
Q111	B-3
Q112	C-4
Q113	C-5
Q114	C-6
Q115	C-6
Q116	C-6
Q117	B-4
Q118	B-5
Q119	G-4
Q120	H-4
Q121	G-4
Q122	G-3
Q123	A-6
Q124	B-5
Q125	B-5
Q126	B-6
Q129	E-4
Q135	F-4
Q138	H-6
Q139	H-6
Q140	H-6
Q141	H-6
Q142	H-6
Q143	H-6
Q144	H-6
Q145	G-6
Q146	H-6
Q147	H-6
Q148	H-6
Q149	G-6
Q150	G-6
Q151	G-6
Q152	F-2
Q153	F-6
Q154	E-3
Q155	F-2
Q156	G-2
Q157	G-2
Q158	G-2
Q159	G-5
Q160	G-5
Q161	H-5
Q162	G-5
Q163	H-5
Q164	H-5
Q165	H-5
Q166	H-5
Q167	H-5
Q168	H-4
Q169	E-5
Q170	E-5
Q171	E-4
Q172	G-5
Q173	G-5
Q174	G-4
Q175	L-1
Q176	K-6
Q177	K-6
Q178	K-2
Q179	H-7
Q180	D-8
Q181	C-8
Q182	D-8
Q183	C-8
Q184	D-8
Q185	A-8
Q186	B-7
Q187	C-5
Q188	B-4
Q189	B-3
Q190	H-6
Q191	H-4
Q192	E-3
Q193	E-3
Q194	E-4
Q195	E-4
Q196	E-4
Q197	E-5
Q198	G-4
Q199	G-4
RV1	K-1
RV2	K-4
RV3	L-4
RV4	K-2
RV5	K-2
RV6	L-3
RV7	K-3
RV8	K-3
RV9	K-3
RV10	J-3
RV17	K-6
RV18	K-7
RV19	K-7
RV20	K-7
RV21	I-5
RV22	J-8
RV23	B-7
RV24	B-7
RV25	G-8
RV26	C-6
RV27	A-2
RV28	C-4
RV29	B-4
RV30	B-2
RV31	B-2
RV32	A-4
RV33	A-4
RV34	A-3
RV35	B-4
RV36	B-3
RV37	B-5
RV38	D-8
RV39	A-5
RV40	G-4
RV41	G-4
RV42	H-3
RV43	G-3
RV44	B-6
RV45	B-6
RV46	B-6
RV47	E-2
RV48	F-2
RV49	G-2
RV50	G-4
RV51	H-5
RV52	E-5
RV53	G-5
RV54	K-1
RV55	J-6
RV56	C-8
RV57	C-8
RV58	C-8
RV59	C-8
RV60	A-3
RV61	E-4
RV62	G-5
S1	I-8
S2	H-8
S3	E-8
TH1	J-3
TH2	J-3
TH3	C-3
TH4	C-3
TP3	J-5
TP4	J-5
TP5	K-2
TP6	J-4
TP8	K-6
TP9	K-6
TP10	K-6
TP11	L-7
TP12	I-5
TP13	G-7
TP14	H-8
TP15	F-8
TP17	B-7
TP18	B-7
TP22	B-6
TP23	L-5
TP24	K-4
TP25	K-4
TP26	B-1
TP27	C-1
TP28	A-3
TP29	B-4
TP30	B-4
TP31	I-5
TP32	B-5
TP33	A-3
TP34	A-3
TP35	H-2
TP37	B-5
TP38	B-5
TP39	B-5
TP41	F-5
TP42	H-6
TP44	F-3
TP46	E-6
TP47	G-5
TP48	H-5
TP49	H-4
TP50	F-5
TP51	E-4
TP57	D-7
TP58	C-8
TP59	H-7
TP60	G-5
TP61	F-5

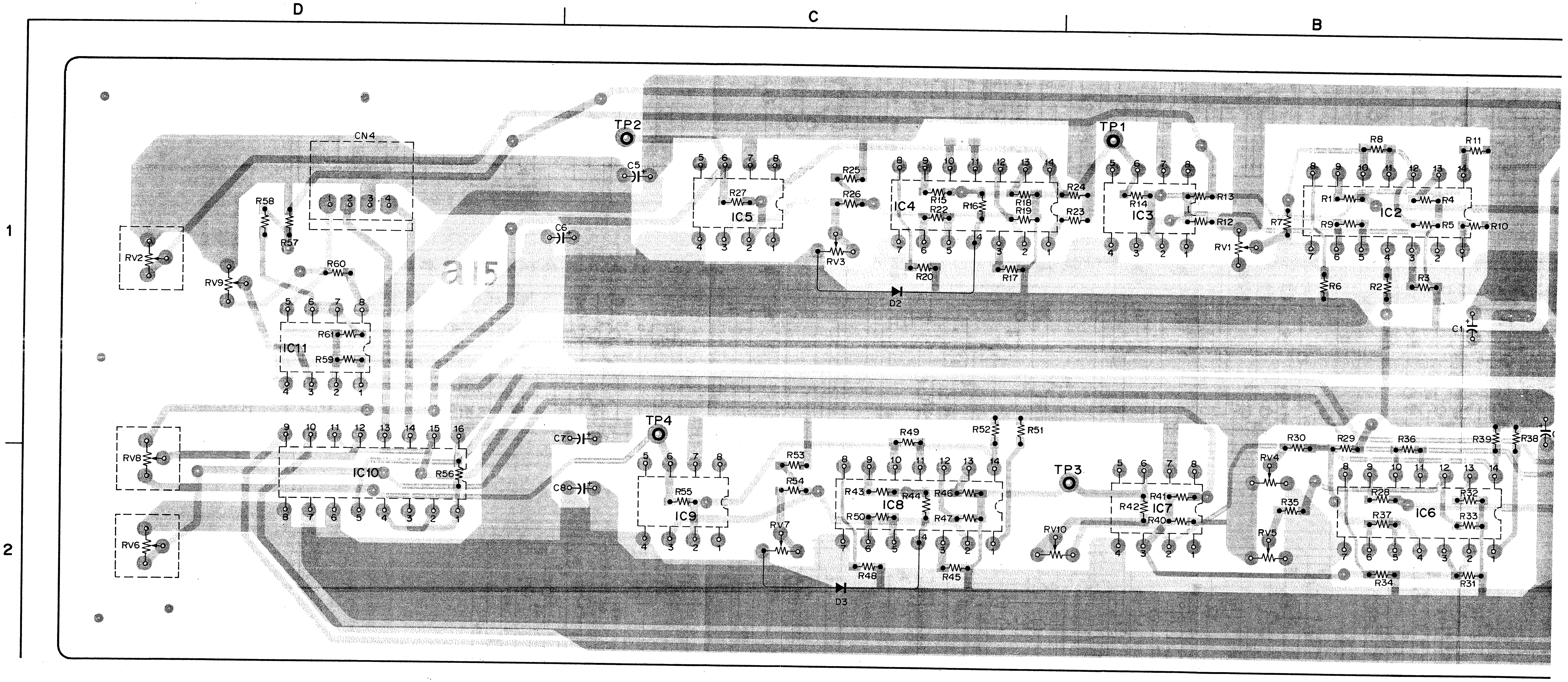
WP-20 (2/2) BOARD

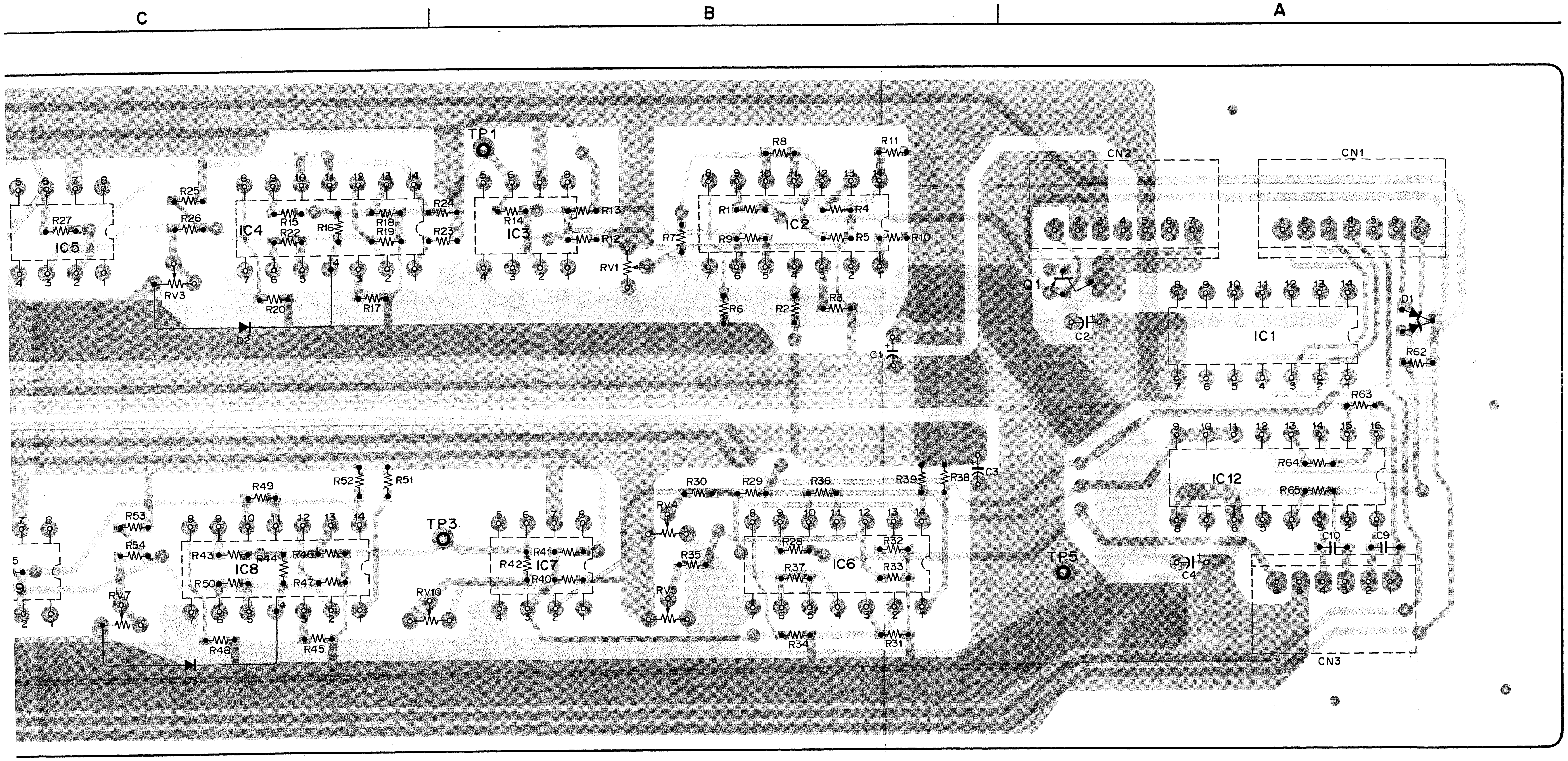

J3
J4
J5
J6
J24
J13
WP-21
L
A
B
M
E
H
G
J
+9V
+5V
EF MODE 2²
EF MODE 2³
C
Q
BORDER/SOFT
BORDER ON/OFF IN
D
GND
EXT KEY IN
CLP. PULSE
EF MODE 2⁴
EF MODE 2⁵
F
WP FADER
PATT. SEL
VR DATA 2⁴
VR DATA 2⁵
VR DATA 2⁶
VR DATA 2⁷
Z
-5V
EK FADER OUT
N
H. OFF
I
WP FADER
H/MIX WIPE AMP
V WIPE AMP
DIFF AMP
DC SHIFT
BUFF
INV
BLKG
CLAMP
NAM
LATCH
BLKG DC SET
RV47:ECHO WIPE LEV (1)
RV48:ECHO WIPE DC SET
RV24:BLKG SET (2)
RV23:BLKG SET (1)
RV25:EXT KEY MASK LEV
RV49:EXT KEY GAIN
RV57:FADER DC SET (L) 1
RV58:FADER DC SET (H) 2
RV59:FADER DC SET (L) 2
RV56:FADER DC SET (H) 1
RV28:WIPE FADER GAIN
IC16 TC4053BP
IC15 TC4053BP
IC17 TC4052BP
IC55 TC4053BP
IC46 BX3992P
IC51 TC4053BP
IC21 μPC339C
IC52 TC4011BP
IC43 TC4053BP
IC42 TC4053BP
IC44 TC4052BP
IC48 BX3992P
IC45 TC4052BP
IC54 TC4053BP
IC39 TC4053BP
IC53 TC4042BP
IC49 TC4053BP
IC27 TL082CP
IC19 TC4053BP
IC41 TC4011BP
IC50 TC4028BP
FL1
TP13
TP14
TP15
TP17
TP18
TP41
TP42
TP44
TP46
TP56
TP57
TP59
TP22
2SC1623
2SA812


J3 WP-21
J4 WP-21
J5 WP-21
J6 WP-21
DC SHIFT
DIFF AMP
BUFF
INV
BLKG
CLAMP
BLKG DC SET
ECHO WIPE GEN
BORDER KEY GEN
NAM
DC SHIFT NAM
AMP
IC17 TC4052BP
IC55 TC4053BP
IC48 BX3992P
IC51 TC4053BP
IC21 μPC339C
IC52 TC4011BP
IC20 TC4052BP
IC47 μPC319C
IC48 μPC319C
IC44 TC4052BP
IC45 TC4052BP
IC54 TC4053BP
IC39 TC4053BP
IC22 TL082CP (2/2)
IC19 TC4053BP
IC41 TC4011BP
IC50 TC4028BP
RV47:ECHO WIPE LEV (1)
RV48:ECHO WIPE DC SET
RV24:BLKG SET (2)
RV23:BLKG SET (1)
RV25:EXT KEY MASK LEV
RV52:ECHO WIPE DC SET
RV62:ECHO WIPE PED
RV53:ECHO WIPE LEV (2)
RV49:EXT KEY GAIN
RV50:-SLISE LEV
RV51:+SLISE LEV
RV57:FADER DC SET (J) 1
RV58:FADER DC SET (H) 2
RV59:FADER DC SET (H) 3
RV56:FADER DC SET (H) 1
RV26:WIPE FADER GAIN
RV61:EXT WIPE LEV
EK FADER (W) 64
BORDER KEY OUT 51
WEX ON/OFF 72
A/B EFF CONT OUT (G) 52
WP EX IN (G) 76
A/B MIX FADER (G) 53
WEX ON/OFF (G) 68
A/B EFF CONT OUT 50
WP EX IN 74
A/B MIX FADER 37
NARROW BLK (B) 83
MOSAIC IN 70
S 1
R 1
P 1

WP-20 BOARD (2/2)
SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

WP-21 BOARD
SOLDERING SIDE


D
C
B
1
2
CN4
TP2
TP1
TP4
TP3
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
RV1
RV2
RV3
RV4
RV5
RV6
RV7
RV8
RV9
RV10
C1
C5
C6
C7
C8
D2
D3
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
R19
R20
R22
R23
R24
R25
R26
R27
R28
R29
R30
R31
R32
R33
R34
R35
R36
R37
R38
R39
R40
R41
R42
R43
R44
R45
R46
R47
R48
R49
R50
R51
R52
R53
R54
R55
R56
R57
R58
R59
R60
R61


C
B
A
TP1
TP3
TP5
CN1
CN2
CN3
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC12
Q1
D1
D2
D3
C1
C2
C3
C4
C9
C10
RV1
RV3
RV4
RV5
RV7
RV10
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
R19
R20
R22
R23
R24
R25
R26
R27
R28
R29
R30
R31
R32
R33
R34
R35
R36
R37
R38
R39
R40
R41
R42
R43
R44
R45
R46
R47
R48
R49
R50
R51
R52
R53
R54
R62
R63
R64
R65

CN1	A-1
CN2	A-1
CN3	A-2
CN4	D-1
D1	A-1
D2	C-1
	C-2
IC1	A-1
IC2	B-1
IC3	B-1
IC4	C-1
IC5	C-1
IC6	B-2
IC7	B-2
IC8	C-2
IC9	C-2
IC10	D-2
IC11	D-1
IC12	A-1
Q1	A-1
RV1	B-1
RV2	D-1
RV3	C-1
RV4	B-2
RV5	B-2
RV6	D-2
RV7	C-2
RV8	D-2
RV9	D-1
RV10	C-2
TP1	B-1
TP2	C-1
TP3	B-2
TP4	C-2
TP5	A-2

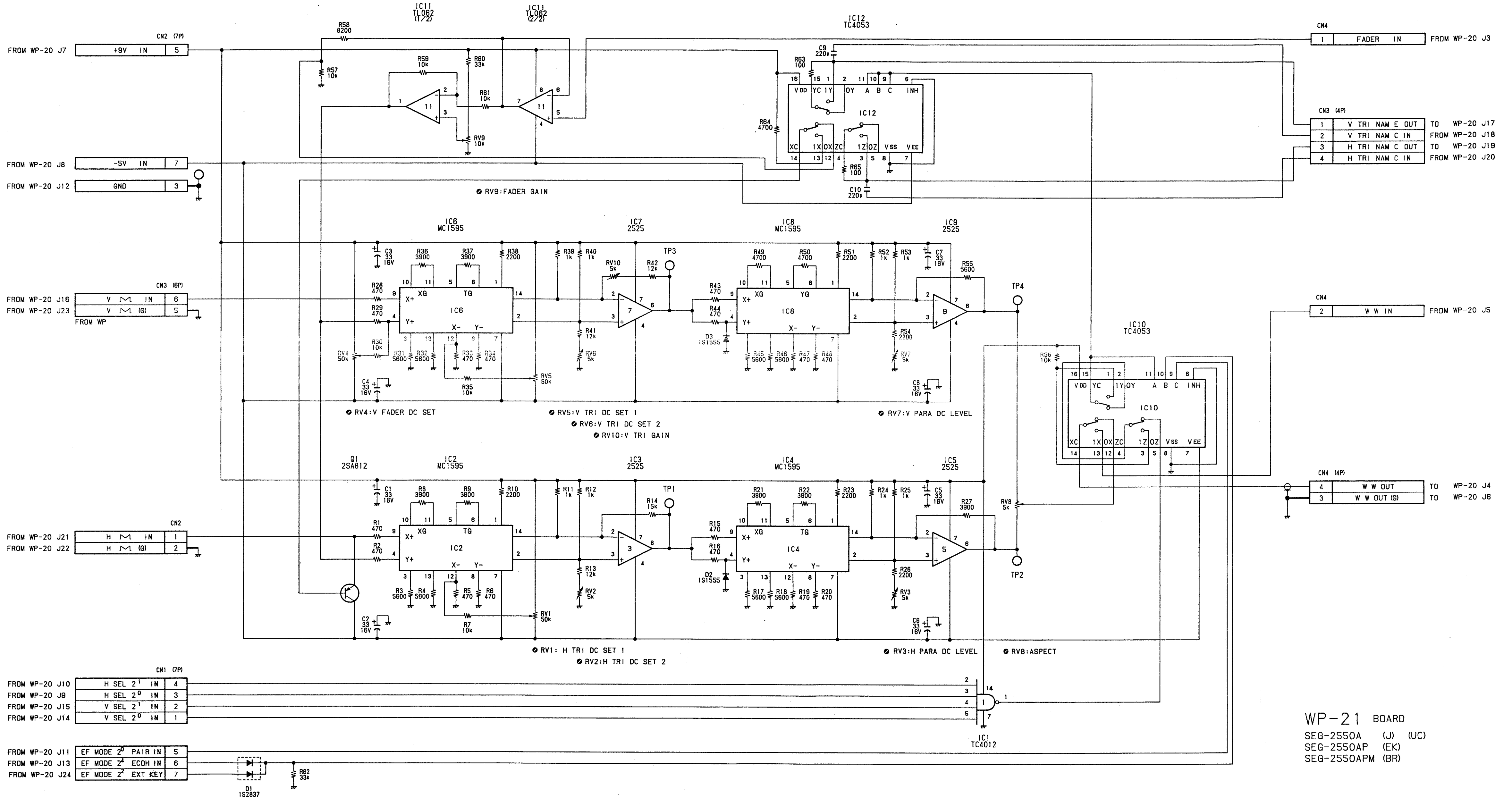
WP-21 BOARD

—SOLDERING SIDE—

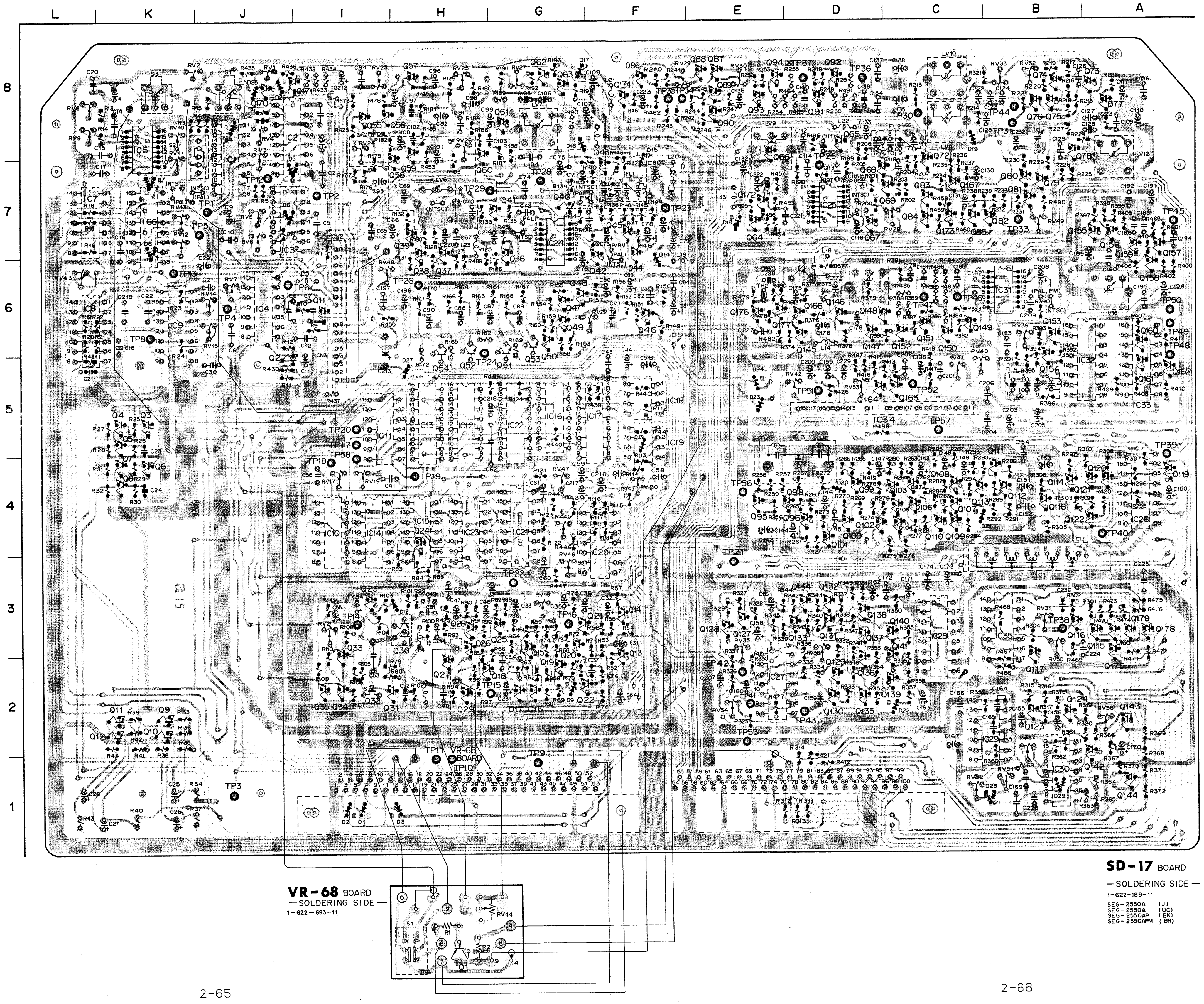
1-612-325-11

SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

WP-21 BOARD


FROM WP-20 J7
+9V IN
CN2 (7P)
FROM WP-20 J8
-5V IN
FROM WP-20 J12
GND
FROM WP-20 J16
FROM WP-20 J23
V ⩘ IN
V ⩘ (G)
CN3 (6P)
FROM WP
FROM WP-20 J21
FROM WP-20 J22
H ⩘ IN
H ⩘ (G)
CN2
FROM WP-20 J10
FROM WP-20 J9
FROM WP-20 J15
FROM WP-20 J14
H SEL 2¹ IN
H SEL 2⁰ IN
V SEL 2¹ IN
V SEL 2⁰ IN
CN1 (7P)
FROM WP-20 J11
FROM WP-20 J13
FROM WP-20 J24
EF MODE 2⁰ PAIR IN
EF MODE 2⁴ ECOH IN
EF MODE 2² EXT KEY
D1 1S2837
R62 33k
IC11 TL082 (1/2)
IC11 TL082 (2/2)
IC12 TC4053
IC6 MC1595
IC7 2525
IC8 MC1595
IC9 2525
IC2 MC1595
IC3 2525
IC4 MC1595
IC5 2525
IC10 TC4053
IC1 TC4012
Q1 2SA812
TP1
TP2
TP3
TP4
CN4
FADER IN
FROM WP-20 J3
CN3 (4P)
V TRI NAM E OUT
V TRI NAM C IN
H TRI NAM C OUT
H TRI NAM C IN
TO WP-20 J17
FROM WP-20 J18
TO WP-20 J19
FROM WP-20 J20
W W IN
FROM WP-20 J5
CN4 (4P)
W W OUT
W W OUT (G)
TO WP-20 J4
TO WP-20 J6
RV9:FADER GAIN
RV4:V FADER DC SET
RV5:V TRI DC SET 1
RV6:V TRI DC SET 2
RV10:V TRI GAIN
RV7:V PARA DC LEVEL
RV1: H TRI DC SET 1
RV2:H TRI DC SET 2
RV3:H PARA DC LEVEL
RV8:ASPECT
WP-21 BOARD
SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

SD-17 BOARD
SOLDERING SIDE

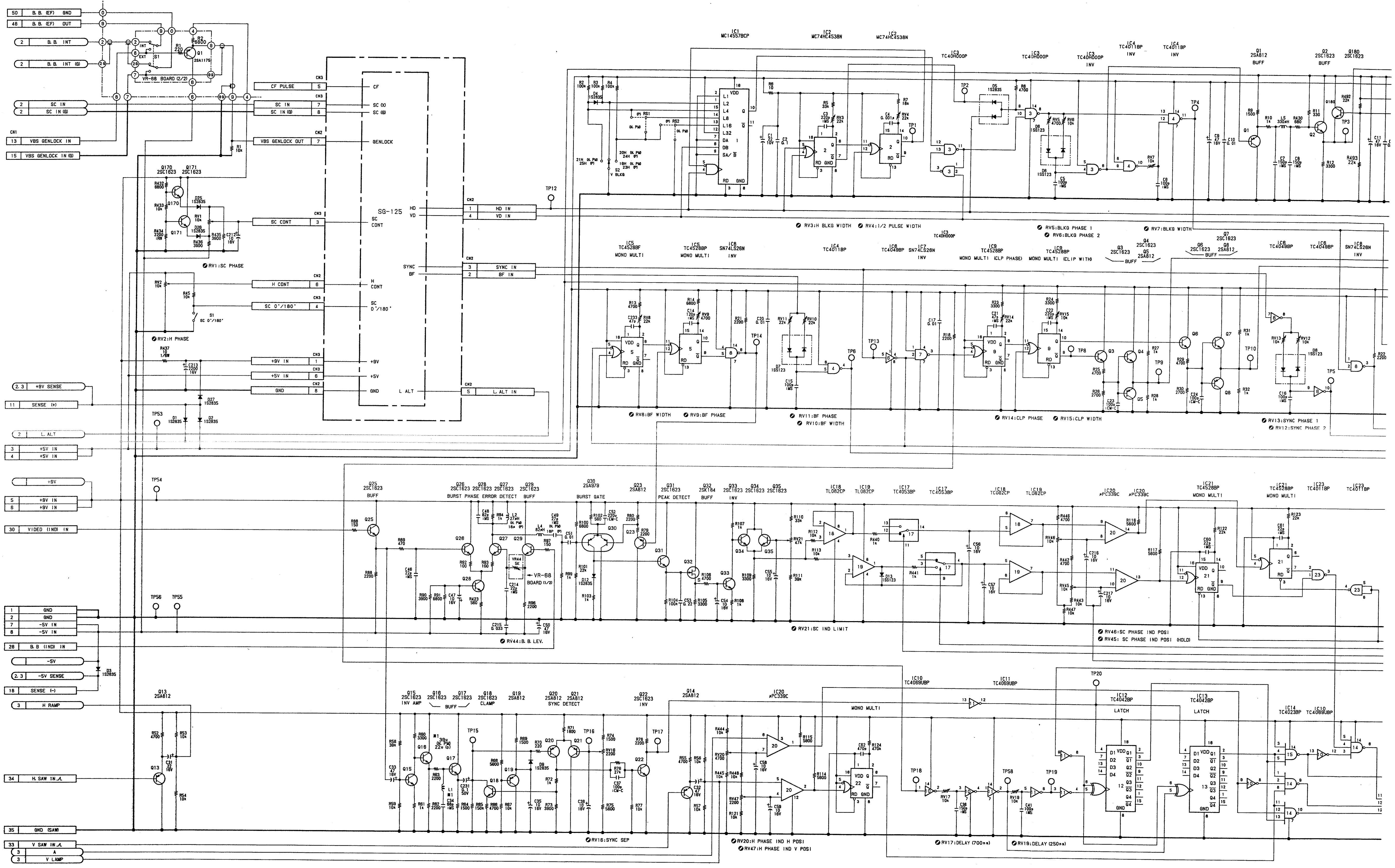


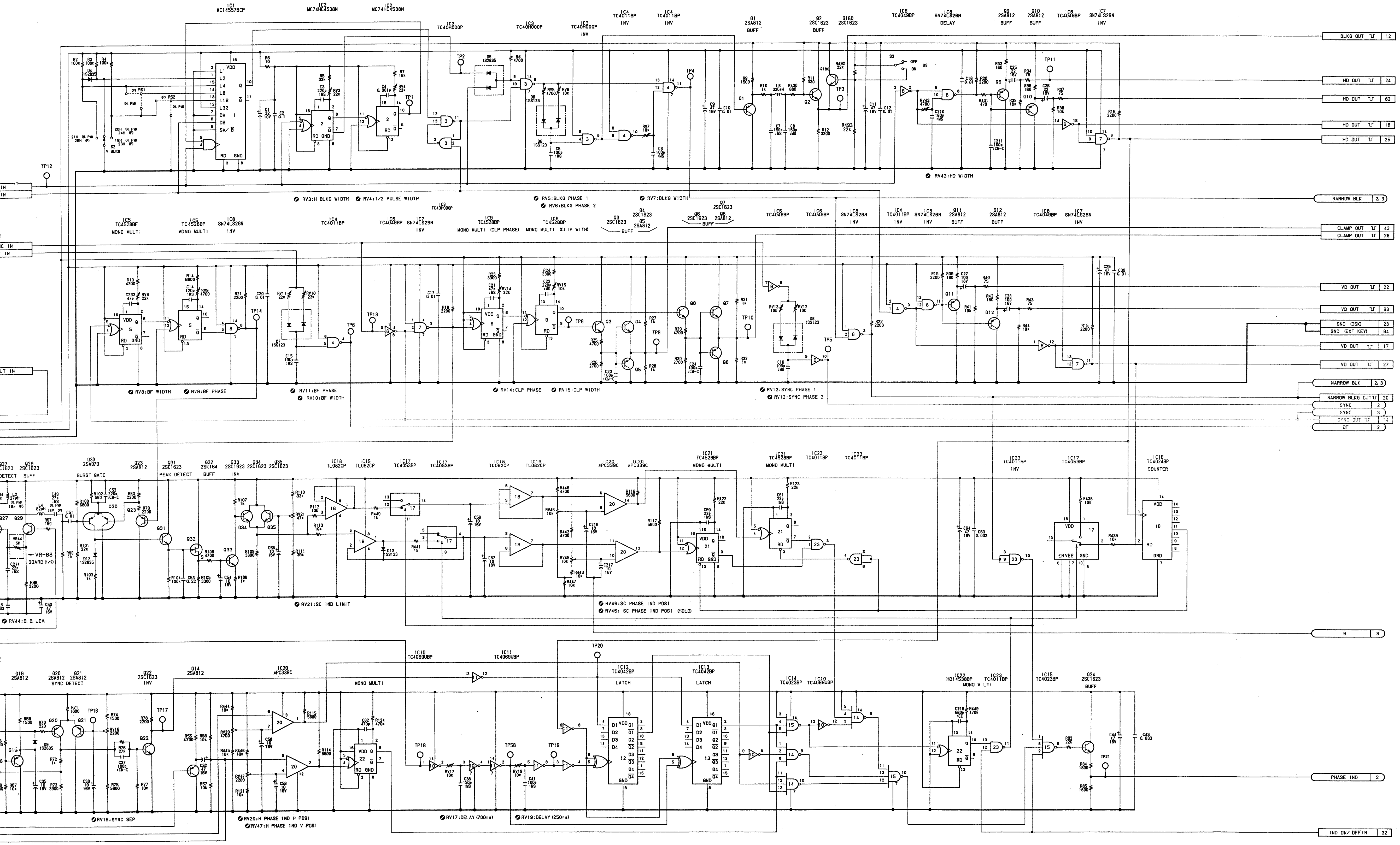
SD-17 BOARD
— SOLDERING SIDE —
1-622-189-11
SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

VR-68 BOARD
— SOLDERING SIDE —
1-622-693-11

CN1	G-1
CN2	I-6
CN3	I-6
CV1	F-6
CV2	B-8
D1	I-1
D2	I-1
D3	I-1
D4	J-8
D5	J-7
D6	J-7
D7	K-7
D8	K-7
D9	G-2
D12	H-3
D13	F-5
D14	F-7
D15	F-8
D16	G-8
D17	G-8
D18	E-7
D19	C-8
D20	D-4
D21	C-4
D22	D-2
D23	E-5
D24	E-5
D25	J-8
D26	J-8
D27	I-5
D28	C-1
D29	B-1
DL1	B-3
FL1	F-7
FL2	D-8
FL3	E-4
FL4	B-5
IC1	J-8
IC2	J-8
IC3	J-7
IC4	J-6
IC5	K-8
IC6	K-7
IC7	L-7
IC8	L-6
IC9	K-6
IC10	I-4
IC11	I-5
IC12	H-5
IC13	H-5
IC14	I-4
IC15	H-4
IC16	G-5
IC17	G-5
IC18	F-5
IC19	F-5
IC20	G-4
IC21	G-4
IC22	G-5
LV6	H-7
LV7	G-8
LV9	E-7
LV10	C-8
LV11	C-8
LV12	A-7
LV15	D-6
LV16	A-6
IC23	H-4
IC24	G-7
IC25	D-7
IC26	A-4
IC27	E-2
IC28	C-3
IC29	C-2
IC30	B-1
IC31	B-6
IC32	B-5
IC33	A-5
IC34	D-5
IC35	B-3
Q1	I-6
Q2	J-6
Q3	K-5
Q4	K-5
Q5	K-5
Q6	K-4
Q7	K-4
Q8	K-4
Q9	K-2
Q10	K-2
Q11	L-2
Q12	L-2
Q13	F-3
Q14	F-3
Q15	G-3
Q16	G-2
Q17	G-2
Q18	H-2
Q19	G-2
Q20	G-3
Q21	G-3
Q22	G-2
Q23	I-3
Q24	H-4
Q25	H-3
Q26	H-3
Q27	H-3
Q28	H-3
Q29	H-2
Q30	I-3
Q31	I-2
Q32	I-2
Q33	I-2
Q34	I-2
Q35	I-2
Q36	G-7
Q37	H-7
Q38	H-7
Q39	H-7
Q40	G-7
Q41	H-7
Q42	G-7
Q43	F-7
Q44	F-7
Q45	F-7
Q46	F-6
Q47	G-6
Q48	G-6
Q49	G-6
Q50	G-6
Q51	G-6
Q52	H-6
Q53	G-6
Q54	H-6
Q55	I-8
Q56	I-8
Q57	H-8
Q58	I-8
Q59	H-8
Q60	H-8
Q61	G-8
Q62	G-8
Q63	G-8
Q64	E-7
Q65	D-8
Q66	E-8
Q67	D-7
Q68	D-7
Q69	D-7
Q72	C-7
Q73	B-8
Q74	B-8
Q75	B-8
Q76	B-8
Q77	A-8
Q78	B-8
Q79	B-7
Q80	B-7
Q81	B-7
Q82	C-7
Q83	C-7
Q84	C-7
Q85	C-7
Q86	F-8
Q87	E-8
Q88	E-8
Q89	E-8
Q90	E-8
Q91	D-8
Q92	D-8
Q93	E-8
Q94	E-8
Q95	E-4
Q96	D-4
Q97	C-4
Q98	E-4
Q99	D-4
Q100	D-4
Q101	D-4
Q102	D-4
Q103	D-4
Q104	D-4
Q105	D-4
Q106	C-4
Q107	C-4
Q108	C-4
Q109	C-4
Q110	C-4
Q111	C-4
Q112	B-4
Q113	C-4
Q114	B-4
Q115	B-3
Q116	B-3
Q117	B-2
Q118	B-4
Q119	A-4
Q120	A-4
Q121	B-4
Q122	B-4
Q123	B-2
Q124	B-2
Q127	E-3
Q128	E-3
Q129	D-2
Q130	D-2
Q131	D-3
Q132	D-3
Q133	E-3
Q134	D-3
Q135	D-2
Q136	D-2
Q137	D-3
Q138	D-3
Q139	D-2
Q140	D-3
Q141	D-2
Q142	B-2
Q143	A-2
Q144	A-1
Q145	E-6
Q146	D-6
Q147	D-6
Q148	D-6
Q149	C-6
Q150	C-6
Q151	C-6
Q152	C-6
Q153	B-6
Q154	B-5
Q155	B-7
Q156	A-7
Q157	A-7
Q158	A-6
Q159	A-7
Q160	A-6
Q161	A-5
Q162	A-5
Q163	D-5
Q164	D-5
Q165	A-3
Q166	E-6
Q167	C-7
Q170	J-8
Q171	J-8
Q172	E-7
Q173	C-7
Q174	F-8
Q175	A-3
Q176	E-6
Q177	E-6
Q178	A-3
Q179	A-3
RV1	J-8
RV2	K-8
RV3	J-8
RV4	J-8
RV5	J-7
RV6	J-7
RV7	J-6
RV8	L-8
RV9	L-8
RV10	K-8
RV11	K-8
RV12	K-7
RV13	K-7
RV14	K-6
RV15	K-6
RV16	G-3
RV17	I-4
RV19	I-4
RV20	F-4
RV21	I-3
RV22	G-6
RV23	I-8
RV24	I-8(PAL)
RV25	H-8
RV26	H-8(PAL)
RV27	G-8
RV28	D-7
RV29	F-8
RV30	E-8
RV31	B-3
RV32	B-8
RV33	B-8
RV34	E-2
RV35	E-3
RV36	D-3
RV37	B-2
RV38	A-2
RV39	B 6
RV40	C-5
RV41	C-5
RV42	E-5
RV43	L-6
RV44	H-2
RV45	G-4
RV46	G-3
RV47	G-4
RV48	I-6
RV49	B-7
RV50	B-3
RV51	B-1
RV52	C-1
RV53	D-5
S1	J-8
S2	K-8
TH1	E-7
TH2	E-6
TP1	K-7
TP2	I-7
TP3	J-1
TP4	J-6
TP5	K-7
TP6	J-6
TP8	K-6
TP9	G-1
TP10	H-1
TP11	H-1
TP12	J-7
TP13	K-6
TP14	I-3
TP15	H-2
TP16	G-3
TP17	I-5
TP18	I-5
TP19	H-4
TP20	I-5
TP21	E-3
TP22	G-3
TP23	F-7
TP24	H-6
TP25	D-7
TP26	H-6
TP28	G-7
TP29	H-7(PAL)
TP30	C-8
TP31	B-8
TP33	B-7
TP34	F-8
TP35	F-8
TP36	D-8
TP37	D-8
TP38	B-3
TP39	A-4
TP40	A-4
TP41	E-2
TP42	E-2
TP43	E-2
TP44	B-8
TP45	A-7
TP46	C-6
TP47	C-6
TP48	A-5
TP49	A-6
TP50	A-6
TP51	D-5
TP52	C-5
TP53	E-2
TP56	E-4
TP57	C-5
TP58	I-5

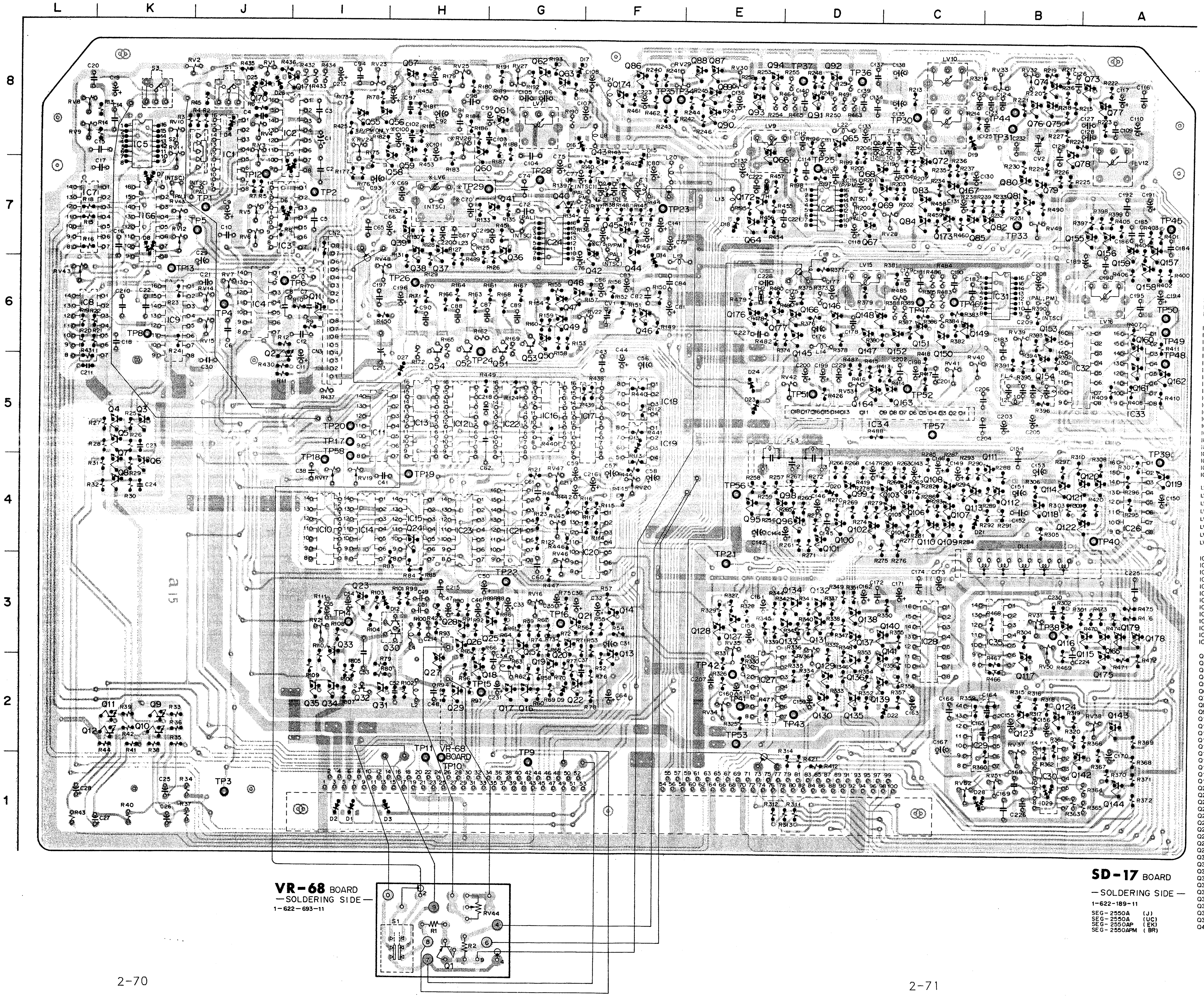
SD-17 (1/3) BOARD


B.B. (EF) GND
B.B. (EF) OUT
B.B. INT
B.B. INT (G)
SC IN
SC IN (G)
VBS GENLOCK IN
VBS GENLOCK IN (G)
VR-68 BOARD (2/2)
CF PULSE
VBS GENLOCK OUT
SC CONT
H CONT
SC 0°/180°
+9V IN
+5V IN
GND
SG-125
HD IN
VD IN
SYNC IN
BF IN
L. ALT IN
+9V SENSE
SENSE (+)
L. ALT
+5V IN
+9V IN
VIDEO (IND) IN
-5V IN
B.B. (IND) IN
-5V
-5V SENSE
SENSE (-)
H RAMP
H. SAW IN
GND (SAW)
V SAW IN
A
V LAMP
RV1:SC PHASE
RV2:H PHASE
RV3:H BLKG WIDTH
RV4:1/2 PULSE WIDTH
RV5:BLKG PHASE 1
RV6:BLKG PHASE 2
RV7:BLKG WIDTH
RV8:BF WIDTH
RV9:BF PHASE
RV11:BF PHASE
RV10:BF WIDTH
RV14:CLP PHASE
RV15:CLP WIDTH
RV13:SYNC PHASE 1
RV12:SYNC PHASE 2
RV44:B.B. LEV.
RV21:SC IND LIMIT
RV46:SC PHASE IND POSI
RV45: SC PHASE IND POSI (HOLD)
RV16:SYNC SEP
RV20:H PHASE IND H POSI
RV47:H PHASE IND V POSI
RV17:DELAY (700ns)
RV19:DELAY (250ns)
IC1 MC14557BCP
IC2 MC74HC4538N
IC3 TC40H000P
IC4 TC4011BP
IC5 TC4528BP MONO MULTI
IC8 SN74LS26N INV
IC6 TC4049BP
IC9 TC4528BP MONO MULTI (CLP PHASE)
MONO MULTI (CLP WITH)
Q1 2SA812 BUFF
Q2 2SC1623 BUFF
Q3 2SC1623
Q4 2SC1623
Q5 2SA812
Q6 2SC1623
Q7 2SC1623
Q8 2SA812
Q170 2SC1623
Q171 2SC1623
Q25 2SC1623 BUFF
Q26 2SC1623
Q28 2SC1623
Q27 2SC1623
Q29 2SC1623
BURST PHASE ERROR DETECT
BUFF
Q30 2SA978 BURST GATE
Q23 2SA812
Q31 2SC1623 PEAK DETECT
Q32 2SK184 BUFF
Q33 2SC1623
Q34 2SC1623
Q35 2SC1623 INV
IC18 TL082CP
IC19 TL082CP
IC17 TC4053BP
IC20 μPC339C
IC21 TC4528BP MONO MULTI
IC23 TC4011BP
Q13 2SA812
Q15 2SC1623 INV AMP
Q16 2SC1623
Q17 2SC1623 BUFF
Q18 2SC1623 CLAMP
Q19 2SA812
Q20 2SA812
Q21 2SA812 SYNC DETECT
Q22 2SC1623 INV
Q14 2SA812
IC20 μPC339C
MONO MULTI
IC10 TC4069UBP
IC11 TC4069UBP
IC12 TC4042BP LATCH
IC13 TC4042BP LATCH
IC14 TC4023BP
IC10 TC4069UBP
TP1
TP2
TP3
TP4
TP5
TP6
TP8
TP9
TP10
TP12
TP13
TP14
TP15
TP16
TP17
TP18
TP19
TP20
TPS3
TPS4
TPS5
TPS6
TPS8
VR-68 BOARD (1/2)


BLKG OUT 12
HD OUT 24
HD OUT 62
HD OUT 16
HD OUT 25
NARROW BLK 2.3
CLAMP OUT 43
CLAMP OUT 26
VD OUT 22
VD OUT 63
GND (DSK) 23
GND (EXT KEY) 64
VD OUT 17
VD OUT 27
NARROW BLK 2.3
NARROW BLKG OUT 20
SYNC 2
SYNC 3
SYNC OUT 14
BF 2
B 3
PHASE IND 3
IND ON/OFF IN 32
RV3:H BLKG WIDTH
RV4:1/2 PULSE WIDTH
RV5:BLKG PHASE 1
RV6:BLKG PHASE 2
RV7:BLKG WIDTH
RV43:HD WIDTH
RV8:BF WIDTH
RV9:BF PHASE
RV11:BF PHASE
RV10:BF WIDTH
RV14:CLP PHASE
RV15:CLP WIDTH
RV13:SYNC PHASE 1
RV12:SYNC PHASE 2
RV21:SC IND LIMIT
RV46:SC PHASE IND POSI
RV45: SC PHASE IND POSI (HOLD)
RV44:B.B. LEV.
RV18:SYNC SEP
RV20:H PHASE IND H POSI
RV47:H PHASE IND V POSI
RV17:DELAY (700ns)
RV19:DELAY (250ns)
IC1 MC14557BCP
IC2 MC74HC4538N
IC3 TC40H000P
IC4 TC4011BP
IC5 TC4528BP
IC6 TC4049BP
IC7 SN74LS26N
IC8 SN74LS26N
IC9 TC4528BP
IC10 TC4069UBP
IC11 TC4069UBP
IC12 TC4042BP
IC13 TC4042BP
IC14 TC4023BP
IC15 TC4023BP
IC16 TC4024BP COUNTER
IC17 TC4053BP
IC18 TL082CP
IC19 TL082CP
IC20 μPC339C
IC21 TC4528BP MONO MULTI
IC22 HD14538BP MONO MULTI
IC23 TC4011BP
BURST GATE
PEAK DETECT
SYNC DETECT
LATCH
VR-88 BOARD (1/2)

SD-17 BOARD (1/3)
SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

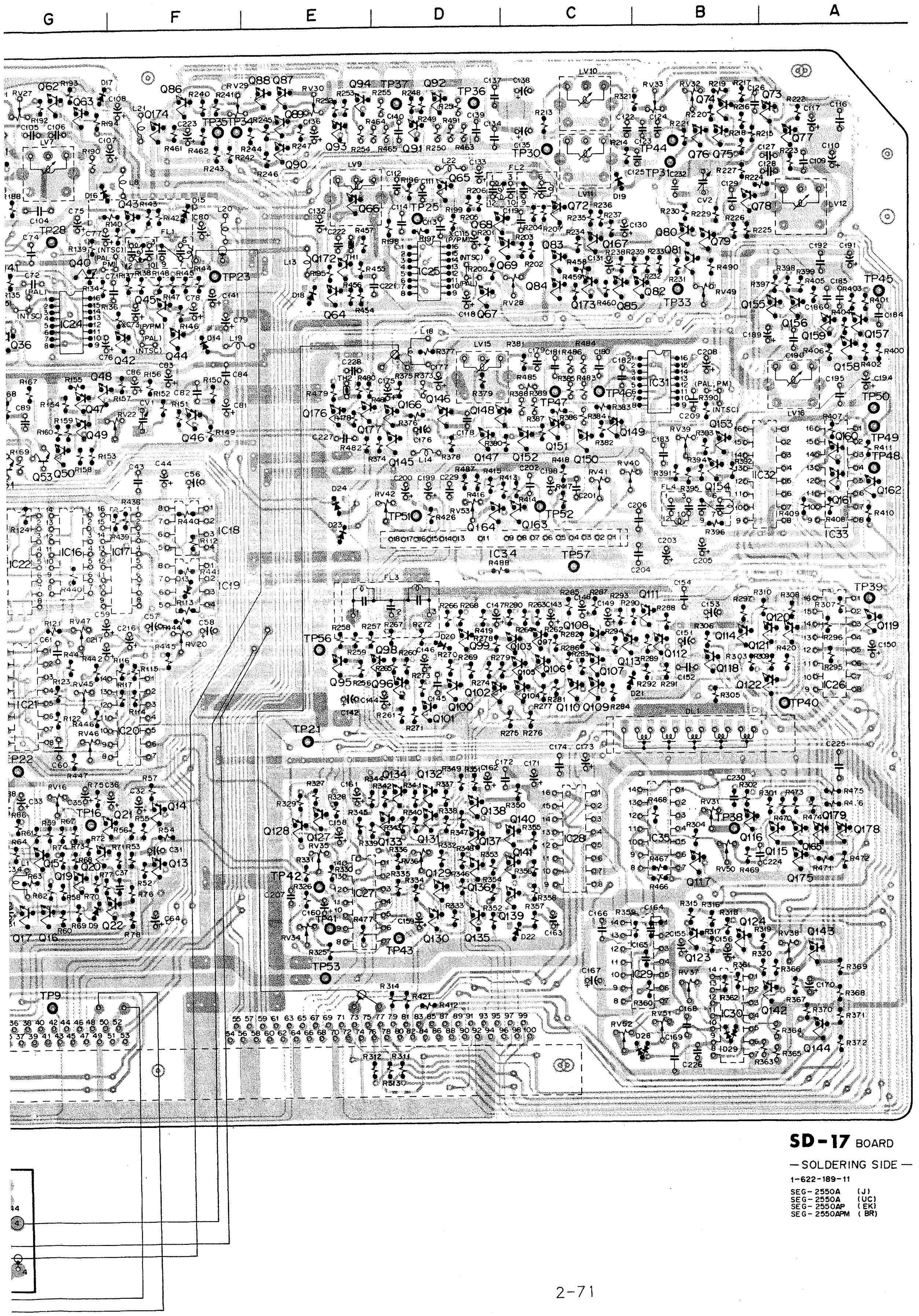
SD-17 BOARD
SOLDERING SIDE



SD-17 BOARD
— SOLDERING SIDE —
1-622-189-11
SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

VR-68 BOARD
— SOLDERING SIDE —
1-622-693-11

CN1	G-1
CN2	I-6
CN3	I-6
CV1	F-6
CV2	B-8
D1	I-1
D2	I-1
D3	I-1
D4	J-8
D5	J-7
D6	J-7
D7	K-7
D8	K-7
D9	G-2
D12	H-3
D13	F-5
D14	F-7
D15	F-8
D16	G-8
D17	G-8
D18	E-7
D19	C-8
D20	D-4
D21	C-4
D22	D-2
D23	E-5
D24	E-5
D25	J-8
D26	J-8
D27	I-5
D28	C-1
D29	B-1
DL1	B-3
FL1	F-7
FL2	D-8
FL3	E-4
FL4	B-5
IC1	J-8
IC2	J-8
IC3	J-7
IC4	J-6
IC5	K-8
IC6	K-7
IC7	L-7
IC8	L-6
IC9	K-6
IC10	I-4
IC11	I-5
IC12	H-5
IC13	H-5
IC14	I-4
IC15	H-4
IC16	G-5
IC17	G-5
IC18	F-5
IC19	F-5
IC20	G-4
IC21	G-4
IC22	G-5
LV6	H-7
LV7	G-8
LV9	E-7
LV10	C-8
LV11	C-8
LV12	A-7
LV15	D-6
LV16	A-6
IC23	H-4
IC24	G-7
IC25	D-7
IC26	A-4
IC27	E-2
IC28	C-3
IC29	C-2
IC30	B-1
IC31	B-6
IC32	B-5
IC33	A-5
IC34	D-5
IC35	B-3
Q1	I-6
Q2	J-6
Q3	K-5
Q4	K-5
Q5	K-5
Q6	K-4
Q7	K-4
Q8	K-4
Q9	K-2
Q10	K-2
Q11	L-2
Q12	L-2
Q13	F-3
Q14	F-3
Q15	G-3
Q16	G-2
Q17	G-2
Q18	H-2
Q19	G-2
Q20	G-3
Q21	G-3
Q22	G-2
Q23	I-3
Q24	H-4
Q25	H-3
Q26	H-3
Q27	H-3
Q28	H-3
Q29	H-2
Q30	I-3
Q31	I-2
Q32	I-2
Q33	I-2
Q34	I-2
Q35	I-2
Q36	G-7
Q37	H-7
Q38	H-7
Q39	H-7
Q40	G-7
Q41	H-7
Q42	G-7
Q43	F-7
Q44	F-7
Q45	F-7
Q46	F-6
Q47	G-6
Q48	G-6
Q49	G-6
Q50	G-6
Q51	G-6
Q52	H-6
Q53	G-6
Q54	H-6
Q55	I-8
Q56	I-8
Q57	H-8
Q58	I-8
Q59	H-8
Q60	H-8
Q61	G-8
Q62	G-8
Q63	G-8
Q64	E-7
Q65	D-8
Q66	E-8
Q67	D-7
Q68	D-7
Q69	D-7
Q72	C-7
Q73	B-8
Q74	B-8
Q75	B-8
Q76	B-8
Q77	A-8
Q78	B-8
Q79	B-7
Q80	B-7
Q81	B-7
Q82	C-7
Q83	C-7
Q84	C-7
Q85	C-7
Q86	F-8
Q87	E-8
Q88	E-8
Q89	E-8
Q90	E-8
Q91	D-8
Q92	D-8
Q93	E-8
Q94	E-8
Q95	E-4
Q96	D-4
Q97	C-4
Q98	E-4
Q99	D-4
Q100	D-4
Q101	D-4
Q102	D-4
Q103	D-4
Q104	D-4
Q105	D-4
Q106	C-4
Q107	C-4
Q108	C-4
Q109	C-4
Q110	C-4
Q111	C-4
Q112	B-4
Q113	C-4
Q114	B-4
Q115	B-3
Q116	B-3
Q117	B-2
Q118	B-4
Q119	A-4
Q120	A-4
Q121	B-4
Q122	B-4
Q123	B-2
Q124	B-2
Q127	E-3
Q128	E-3
Q129	D-2
Q130	D-2
Q131	D-3
Q132	D-3
Q133	E-3
Q134	D-3
Q135	D-2
Q136	D-2
Q137	D-3
Q138	D-3
Q139	D-2
Q140	D-3
Q141	D-2
Q142	B-2
Q143	A-2
Q144	A-1
Q145	E-6
Q146	D-6
Q147	D-6
Q148	D-6
Q149	C-6
Q150	C-6
Q151	C-6
Q152	C-6
Q153	B-6
Q154	B-5
Q155	B-7
Q156	A-7
Q157	A-7
Q158	A-6
Q159	A-7
Q160	A-6
Q161	A-5
Q162	A-5
Q163	D-5
Q164	D-5
Q165	A-3
Q166	E-6
Q167	C-7
Q170	J-8
Q171	J-8
Q172	E-7
Q173	C-7
Q174	F-8
Q175	A-3
Q176	E-6
Q177	E-6
Q178	A-3
Q179	A-3
RV1	J-8
RV2	K-8
RV3	J-8
RV4	J-8
RV5	J-7
RV6	J-7
RV7	J-6
RV8	L-8
RV9	L-8
RV10	K-8
RV11	K-8
RV12	K-7
RV13	K-7
RV14	K-6
RV15	K-6
RV16	G-3
RV17	I-4
RV19	I-4
RV20	F-4
RV21	I-3
RV22	G-6
RV23	I-8
RV24	I-8(PAL)
RV25	H-8
RV26	H-8(PAL)
RV27	G-8
RV28	D-7
RV29	F-8
RV30	E-8
RV31	B-3
RV32	B-8
RV33	B-8
RV34	E-2
RV35	E-3
RV36	D-3
RV37	B-2
RV38	A-2
RV39	B-6
RV40	C-5
RV41	C-5
RV42	E-5
RV43	L-6
RV44	H-2
RV45	G-4
RV46	G-3
RV47	G-4
RV48	I-6
RV49	B-7
RV50	B-3
RV51	B-1
RV52	C-1
RV53	D-5
S1	J-8
S2	K-8
TH1	E-7
TH2	E-6
TP1	K-7
TP2	I-7
TP3	J-1
TP4	J-6
TP5	K-7
TP6	J-6
TP8	K-6
TP9	G-1
TP10	H-1
TP11	H-1
TP12	J-7
TP13	K-6
TP14	I-3
TP15	H-2
TP16	G-3
TP17	I-5
TP18	I-5
TP19	H-4
TP20	I-5
TP21	E-3
TP22	G-3
TP23	F-7
TP24	H-6
TP25	D-7
TP26	H-6
TP28	G-7
TP29	H-7(PAL)
TP30	C-8
TP31	B-8
TP33	B-7
TP34	F-8
TP35	F-8
TP36	D-8
TP37	D-8
TP38	B-3
TP39	A-4
TP40	A-4
TP41	E-2
TP42	E-2
TP43	E-2
TP44	B-8
TP45	A-7
TP46	C-6
TP47	C-6
TP48	A-5
TP49	A-6
TP50	A-6
TP51	D-5
TP52	C-5
TP53	E-2
TP56	E-4
TP57	C-5
TP58	I-5



SD-17 BOARD

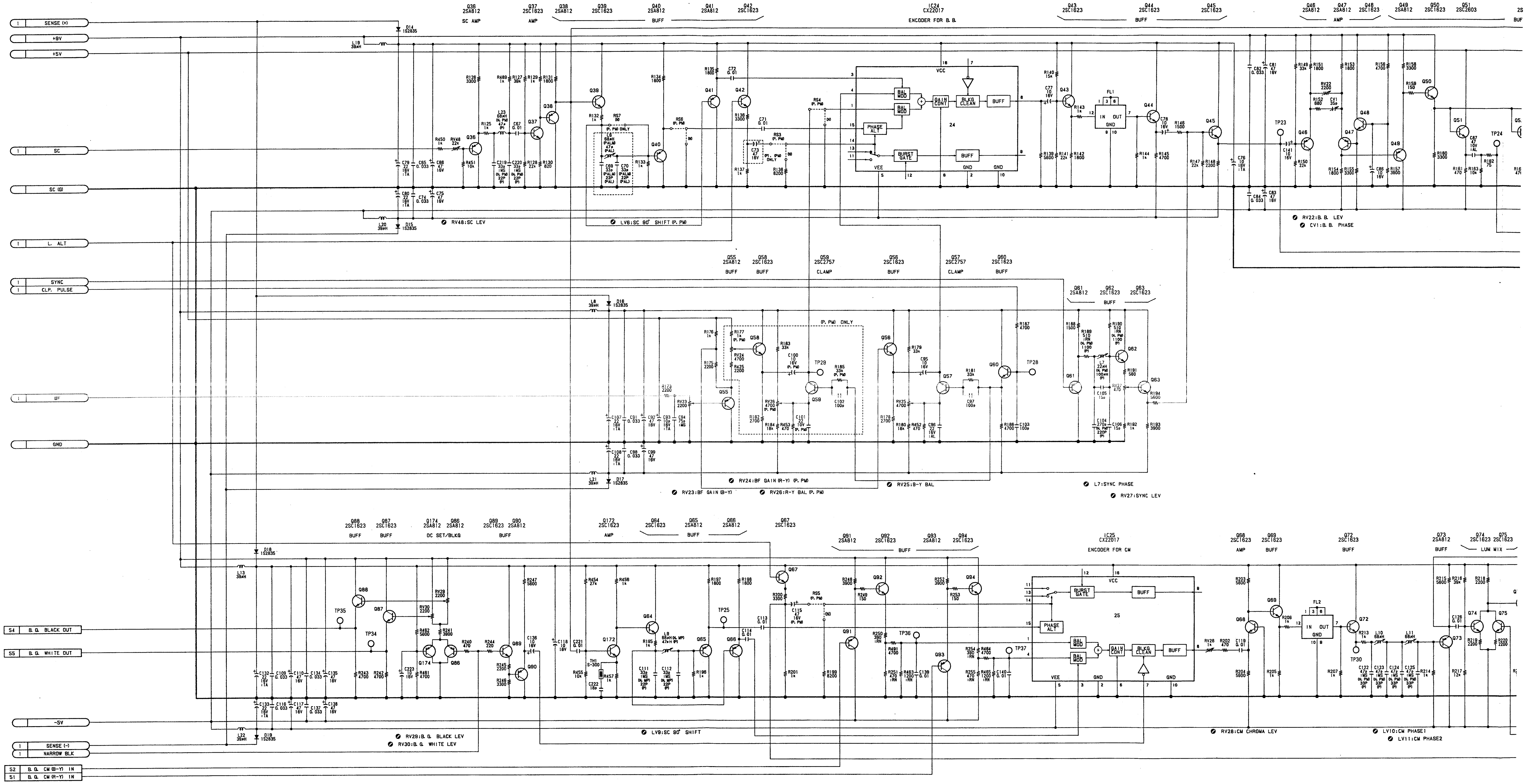
— SOLDERING SIDE —

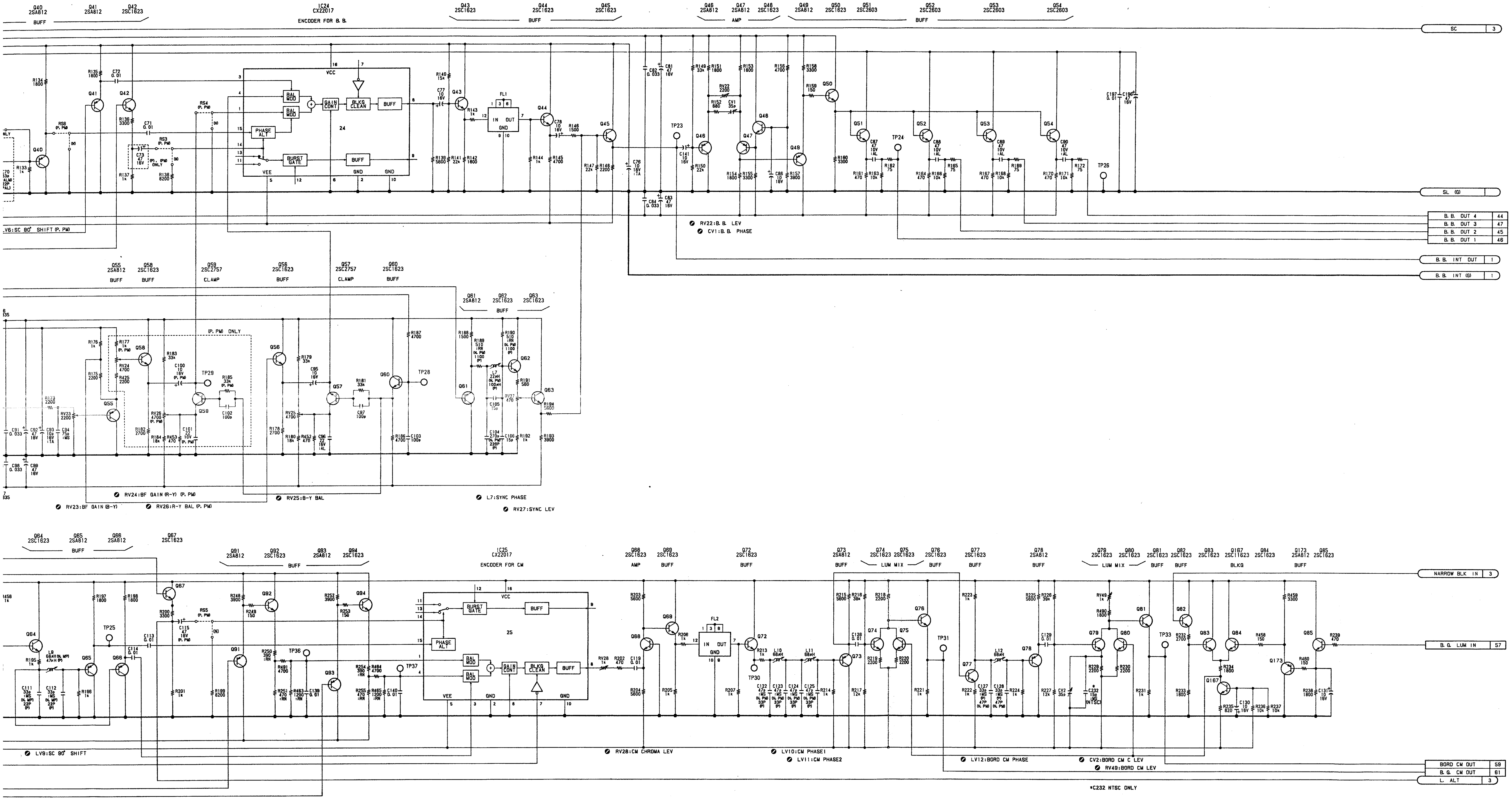
1-622-189-11

SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

CN1	G-1
CN2	I-6
CN3	I-6
CV1	F-6
CV2	B-8
D1	I-1
D2	I-1
D3	I-1
D4	J-8
D5	J-7
D6	J-7
D7	K-7
D8	K-7
D9	G-2
D12	H-3
D13	F-5
D14	F-7
D15	F-8
D16	G-8
D17	G-8
D18	E-7
D19	C-8
D20	D-4
D21	C-4
D22	D-2
D23	E-5
D24	E-5
D25	J-8
D26	J-8
D27	I-5
D28	C-1
D29	B-1
DL1	B-3
FL1	F-7
FL2	D-8
FL3	E-4
FL4	B-5
IC1	J-8
IC2	J-8
IC3	J-7
IC4	J-6
IC5	K-8
IC6	K-7
IC7	L-7
IC8	L-6
IC9	K-6
IC10	I-4
IC11	I-5
IC12	H-5
IC13	H-5
IC14	I-4
IC15	H-4
IC16	G-5
IC17	G-5
IC18	F-5
IC19	F-5
IC20	G-4
IC21	G-4
IC22	G-5
LV6	H-7
LV7	G-8
LV9	E-7
LV10	C-8
LV11	C-8
LV12	A-7
LV15	D-6
LV16	A-6
IC23	H-4
IC24	G-7
IC25	D-7
IC26	A-4
IC27	E-2
IC28	C-3
IC29	C-2
IC30	B-1
IC31	B-6
IC32	B-5
IC33	A-5
IC34	D-5
IC35	B-3
Q1	I-6
Q2	J-6
Q3	K-5
Q4	K-5
Q5	K-5
Q6	K-4
Q7	K-4
Q8	K-4
Q9	K-2
Q10	K-2
Q11	L-2
Q12	L-2
Q13	F-3
Q14	F-3
Q15	G-3
Q16	G-2
Q17	G-2
Q18	H-2
Q19	G-2
Q20	G-3
Q21	G-3
Q22	G-2
Q23	I-3
Q24	H-4
Q25	H-3
Q26	H-3
Q27	H-3
Q28	H-3
Q29	H-2
Q30	I-3
Q31	I-2
Q32	I-2
Q33	I-2
Q34	I-2
Q35	I-2
Q36	G-7
Q37	H-7
Q38	H-7
Q39	H-7
Q40	G-7
Q41	H-7
Q42	G-7
Q43	F-7
Q44	F-7
Q45	F-7
Q46	F-6
Q47	G-6
Q48	G-6
Q49	G-6
Q50	G-6
Q51	G-6
Q52	H-6
Q53	G-6
Q54	H-6
Q55	I-8
Q56	I-8
Q57	H-8
Q58	I-8
Q59	H-8
Q60	H-8
Q61	G-8
Q62	G-8
Q63	G-8
Q64	E-7
Q65	D-8
Q66	E-8
Q67	D-7
Q68	D-7
Q69	D-7
Q72	C-7
Q73	B-8
Q74	B-8
Q75	B-8
Q76	B-8
Q77	A-8
Q78	B-8
Q79	B-7
Q80	B-7
Q81	B-7
Q82	C-7
Q83	C-7
Q84	C-7
Q85	C-7
Q86	F-8
Q87	E-8
Q88	E-8
Q89	E-8
Q90	E-8
Q91	D-8
Q92	D-8
Q93	E-8
Q94	E-8
Q95	E-4
Q96	D-4
Q97	C-4
Q98	E-4
Q99	D-4
Q100	D-4
Q101	D-4
Q102	D-4
Q103	D-4
Q104	D-4
Q105	D-4
Q106	C-4
Q107	C-4
Q108	C-4
Q109	C-4
Q110	C-4
Q111	C-4
Q112	B-4
Q113	C-4
Q114	B-4
Q115	B-3
Q116	B-3
Q117	B-2
Q118	B-4
Q119	A-4
Q120	A-4
Q121	B-4
Q122	B-4
Q123	B-2
Q124	B-2
Q127	E-3
Q128	E-3
Q129	D-2
Q130	D-2
Q131	D-3
Q132	D-3
Q133	E-3
Q134	D-3
Q135	D-2
Q136	D-2
Q137	D-3
Q138	D-3
Q139	D-2
Q140	D-3
Q141	D-2
Q142	B-2
Q143	A-2
Q144	A-1
Q145	E-6
Q146	D-6
Q147	D-6
Q148	D-6
Q149	C-6
Q150	C-6
Q151	C-6
Q152	C-6
Q153	B-6
Q154	B-5
Q155	B-7
Q156	A-7
Q157	A-7
Q158	A-6
Q159	A-7
Q160	A-6
Q161	A-5
Q162	A-5
Q163	D-5
Q164	D-5
Q165	A-3
Q166	E-6
Q167	C-7
Q170	J-8
Q171	J-8
Q172	E-7
Q173	C-7
Q174	F-8
Q175	A-3
Q176	E-6
Q177	E-6
Q178	A-3
Q179	A-3
RV1	J-8
RV2	K-8
RV3	J-8
RV4	J-8
RV5	J-7
RV6	J-7
RV7	J-6
RV8	L-8
RV9	L-8
RV10	K-8
RV11	K-8
RV12	K-7
RV13	K-7
RV14	K-6
RV15	K-6
RV16	G-3
RV17	I-4
RV19	I-4
RV20	F-4
RV21	I-3
RV22	G-6
RV23	I-8
RV24	I-8(PAL)
RV25	H-8
RV26	H-8(PAL)
RV27	G-8
RV28	D-7
RV29	F-8
RV30	E-8
RV31	B-3
RV32	B-8
RV33	B-8
RV34	E-2
RV35	E-3
RV36	D-3
RV37	B-2
RV38	A-2
RV39	B-6
RV40	C-5
RV41	C-5
RV42	E-5
RV43	L-6
RV44	H-2
RV45	G-4
RV46	G-3
RV47	G-4
RV48	I-6
RV49	B-7
RV50	B-3
RV51	B-1
RV52	C-1
RV53	D-5
S1	J-8
S2	K-8
TH1	E-7
TH2	E-6
TP1	K-7
TP2	I-7
TP3	J-1
TP4	J-6
TP5	K-7
TP6	J-6
TP8	K-6
TP9	G-1
TP10	H-1
TP11	H-1
TP12	J-7
TP13	K-6
TP14	I-3
TP15	H-2
TP16	G-3
TP17	I-5
TP18	I-5
TP19	H-4
TP20	I-5
TP21	E-3
TP22	G-3
TP23	F-7
TP24	H-6
TP25	D-7
TP26	H-6
TP28	G-7
TP29	H-7(PAL)
TP30	C-8
TP31	B-8
TP33	B-7
TP34	F-8
TP35	F-8
TP36	D-8
TP37	D-8
TP38	B-3
TP39	A-4
TP40	A-4
TP41	E-2
TP42	E-2
TP43	E-2
TP44	B-8
TP45	A-7
TP46	C-6
TP47	C-6
TP48	A-5
TP49	A-6
TP50	A-6
TP51	D-5
TP52	C-5
TP53	E-2
TP56	E-4
TP57	C-5
TP58	I-5

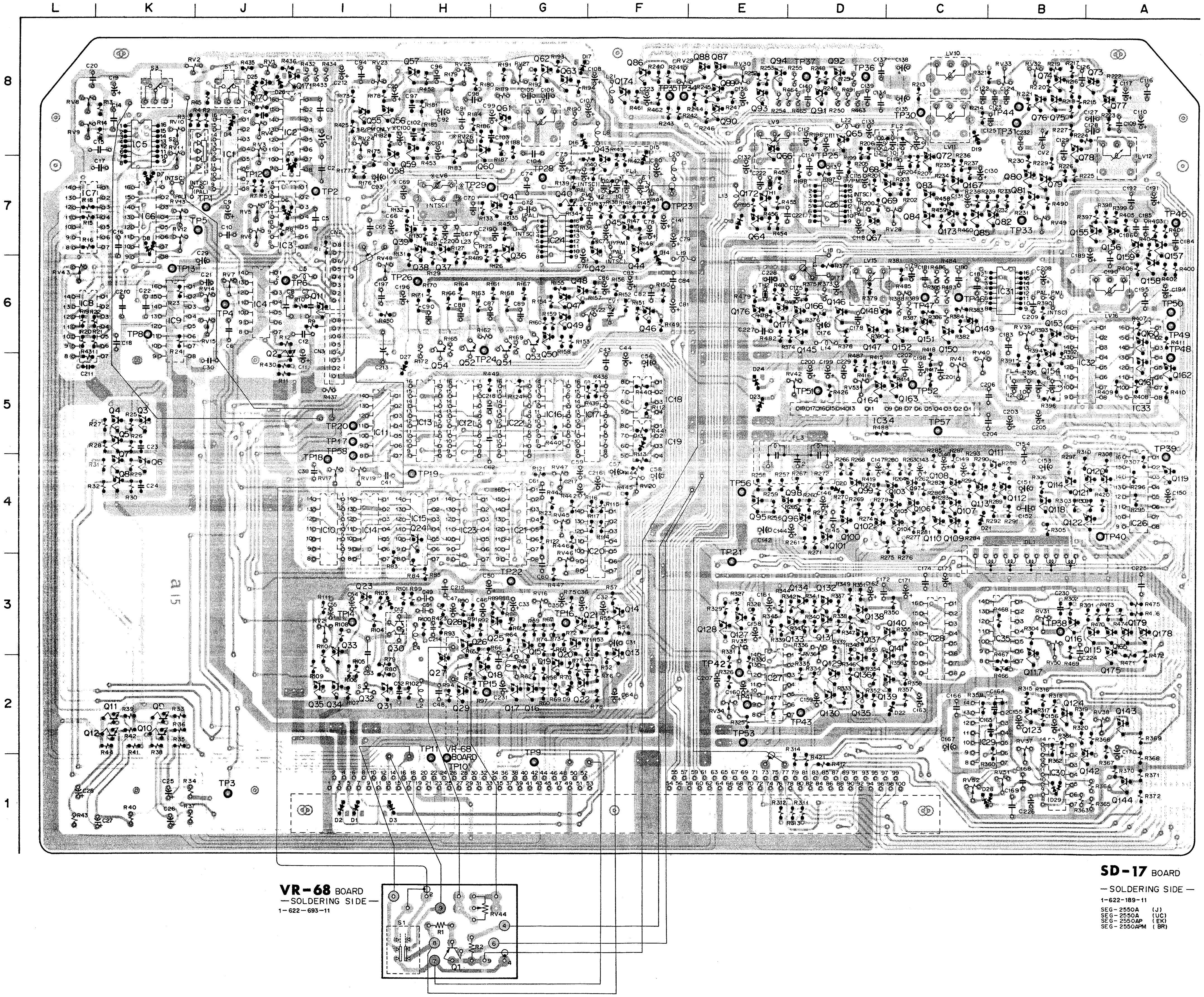
SD-17 (2/3) BOARD


SENSE (+)
+9V
+5V
SC
SC (G)
L. ALT
SYNC
CLP. PULSE
BF
GND
S4 B.G. BLACK OUT
S5 B.G. WHITE OUT
-5V
SENSE (-)
NARROW BLK
S2 B.G. CM (B-Y) IN
S1 B.G. CM (R-Y) IN
Q36 2SA812 SC AMP
Q37 2SC1623 AMP
Q40 2SA812 BUFF
IC24 CX22017 ENCODER FOR B.B.
Q43 2SC1623
Q44 2SC1623 BUFF
Q45 2SC1623
Q46 2SA812
Q47 2SA812 AMP
Q48 2SC1623
Q50 2SC1623
Q51 2SC2603
BAL MOD
GAIN CONT
BLKG CLEAN
BUFF
PHASE ALT
BURST GATE
VCC
VEE
GND
FL1
IN OUT
TP23
TP24
RV48:SC LEV
LV6:SC 90° SHIFT (P, PM)
RV22:B.B. LEV
CV1:B.B. PHASE
Q55 2SA812 BUFF
Q58 2SC1623 BUFF
Q59 2SC2757 CLAMP
Q56 2SC1623 BUFF
Q57 2SC2757 CLAMP
Q60 2SC1623 BUFF
Q61 2SA812
Q62 2SC1623
Q63 2SC1623 BUFF
(P, PM) ONLY
TP29
TP28
RV23:BF GAIN (B-Y)
RV24:BF GAIN (R-Y) (P, PM)
RV26:R-Y BAL (P, PM)
RV25:B-Y BAL
L7:SYNC PHASE
RV27:SYNC LEV
Q88 2SC1623 BUFF
Q87 2SC1623 BUFF
Q174 2SA812 DC SET/BLKG
Q86 2SA812
Q89 2SC1623
Q90 2SA812 BUFF
Q172 2SC1623 AMP
Q64 2SC1623
Q65 2SA812 BUFF
Q66 2SA812
Q67 2SC1623
Q91 2SA812
Q92 2SC1623 BUFF
Q93 2SA812
Q94 2SC1623
IC25 CX22017 ENCODER FOR CM
Q68 2SC1623 AMP
Q69 2SC1623 BUFF
Q72 2SC1623 BUFF
Q73 2SA812 BUFF
Q74 2SC1623
Q75 2SC1623 LUM MIX
FL2
TP35
TP34
TP25
TP36
TP37
TP30
RV29:B.G. BLACK LEV
RV30:B.G. WHITE LEV
LV9:SC 90° SHIFT
RV28:CM CHROMA LEV
LV10:CM PHASE1
LV11:CM PHASE2


IC24 CX22017 ENCODER FOR B. B.
IC25 CX22017 ENCODER FOR CM
BAL MOD
GAIN CONT
BLKG CLEAN
BUFF
PHASE ALT
BURST GATE
VCC
VEE
GND
FL1
FL2
IN OUT
BUFF
AMP
CLAMP
LUM MIX
BLKG
(P, PM) ONLY
SC 3
SL (G)
B. B. OUT 4 44
B. B. OUT 3 47
B. B. OUT 2 45
B. B. OUT 1 46
B. B. INT OUT 1
B. B. INT (G) 1
RV22:B. B. LEV
CV1:B. B. PHASE
LV6:SC 90° SHIFT (P, PM)
RV24:BF GAIN (R-Y) (P, PM)
RV23:BF GAIN (B-Y)
RV26:R-Y BAL (P, PM)
RV25:B-Y BAL
L7:SYNC PHASE
RV27:SYNC LEV
LV9:SC 90° SHIFT
RV28:CM CHROMA LEV
LV10:CM PHASE1
LV11:CM PHASE2
LV12:BORD CM PHASE
CV2:BORD CM C LEV
RV49:BORD CM LEV
*C232 NTSC ONLY
NARROW BLK IN 3
B. G. LUM IN 57
BORD CM OUT 59
B. G. CM OUT 61
L. ALT 3
TP23
TP24
TP25
TP26
TP28
TP29
TP30
TP31
TP33
TP36
TP37

SD-17 BOARD (2/3)
SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

SD-17 BOARD
SOLDERING SIDE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TP33
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TP41
TP42
TP43
TP44
TP45
TP46
TP47
TP48
TP49
TP50
TP51
TP52
TP53
TP56
TP57
TP58
IC1
IC2
IC3
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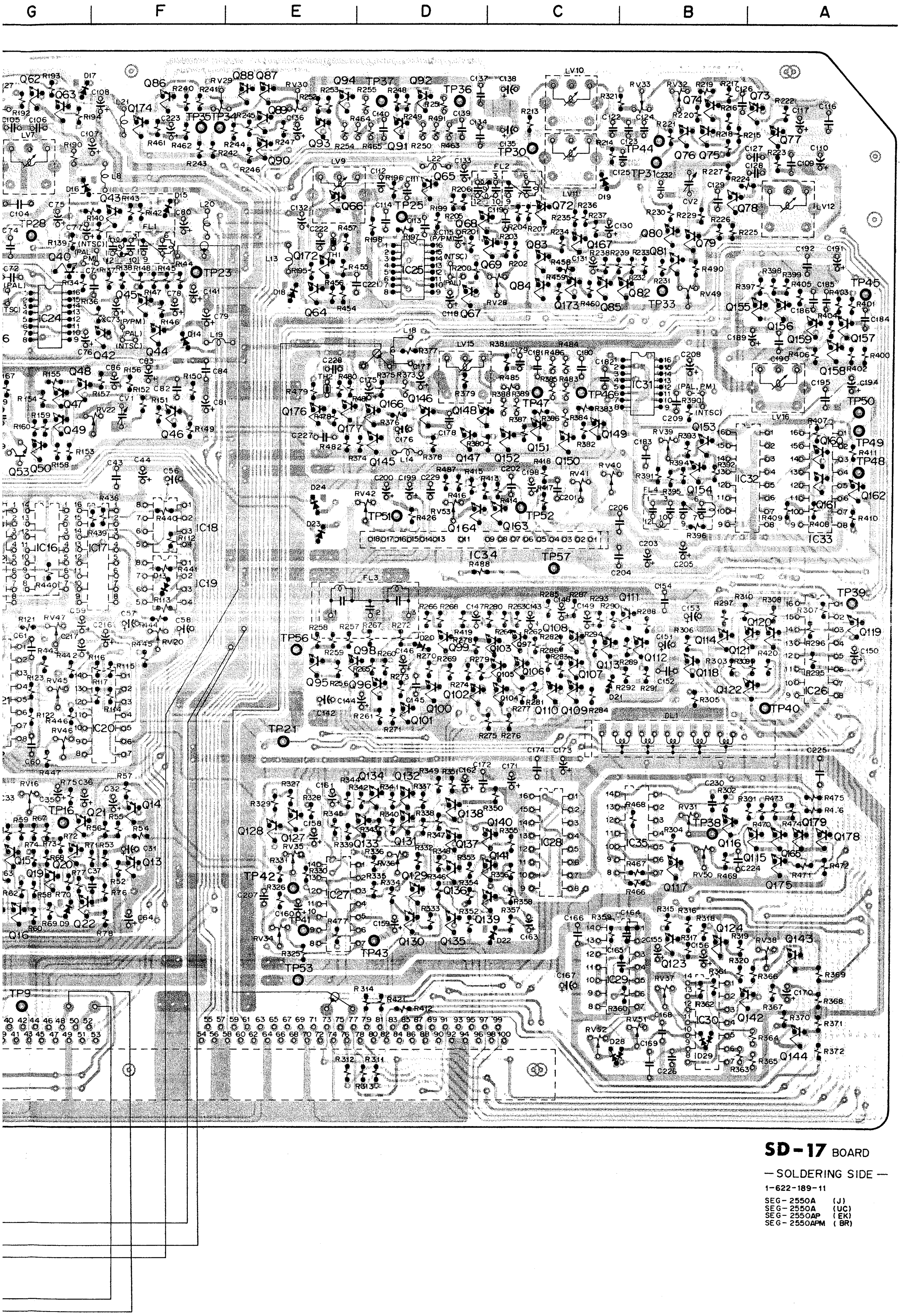
IC26
IC28
IC29
IC30
IC31
IC32
IC33
IC34
IC35
FL1
FL2
FL3
LV6
LV7
LV9
LV10
LV11
LV12
LV15
LV16
S1
S2
DL1
CN1
CN2
CN3
VR-68 BOARD
RV44
R1
R2
(NTSC)
(PAL)
(P/PM)

VR-68 BOARD
— SOLDERING SIDE —
1-622-693-11

SD-17 BOARD
— SOLDERING SIDE —
1-622-189-11

SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

CN1	G-1
CN2	I-6
CN3	I-6
CV1	F-6
CV2	B-8
D1	I-1
D2	I-1
D3	I-1
D4	J-8
D5	J-7
D6	J-7
D7	K-7
D8	K-7
D9	G-2
D12	H-3
D13	F-5
D14	F-7
D15	F-8
D16	G-8
D17	G-8
D18	E-7
D19	C-8
D20	D-4
D21	C-4
D22	D-2
D23	E-5
D24	E-5
D25	J-8
D26	J-8
D27	I-5
D28	C-1
D29	B-1
DL1	B-3
FL1	F-7
FL2	D-8
FL3	E-4
FL4	B-5
IC1	J-8
IC2	J-8
IC3	J-7
IC4	J-6
IC5	K-8
IC6	K-7
IC7	L-7
IC8	L-6
IC9	K-6
IC10	I-4
IC11	I-5
IC12	H-5
IC13	H-5
IC14	I-4
IC15	H-4
IC16	G-5
IC17	G-5
IC18	F-5
IC19	F-5
IC20	G-4
IC21	G-4
IC22	G-5
LV6	H-7
LV7	G-8
LV9	E-7
LV10	C-8
LV11	C-8
LV12	A-7
LV15	D-6
LV16	A-6
IC23	H-4
IC24	G-7
IC25	D-7
IC26	A-4
IC27	E-2
IC28	C-3
IC29	C-2
IC30	B-1
IC31	B-6
IC32	B-5
IC33	A-5
IC34	D-5
IC35	B-3
Q1	I-6
Q2	J-6
Q3	K-5
Q4	K-5
Q5	K-5
Q6	K-4
Q7	K-4
Q8	K-4
Q9	K-2
Q10	K-2
Q11	L-2
Q12	L-2
Q13	F-3
Q14	F-3
Q15	G-3
Q16	G-2
Q17	G-2
Q18	H-2
Q19	G-2
Q20	G-3
Q21	G-3
Q22	G-2
Q23	I-3
Q24	H-4
Q25	H-3
Q26	H-3
Q27	H-3
Q28	H-3
Q29	H-2
Q30	I-3
Q31	I-2
Q32	I-2
Q33	I-2
Q34	I-2
Q35	I-2
Q36	G-7
Q37	H-7
Q38	H-7
Q39	H-7
Q40	G-7
Q41	H-7
Q42	G-7
Q43	F-7
Q44	F-7
Q45	F-7
Q46	F-6
Q47	G-6
Q48	G-6
Q49	G-6
Q50	G-6
Q51	G-6
Q52	H-6
Q53	G-6
Q54	H-6
Q55	I-8
Q56	I-8
Q57	H-8
Q58	I-8
Q59	H-8
Q60	H-8
Q61	G-8
Q62	G-8
Q63	G-8
Q64	E-7
Q65	D-8
Q66	E-8
Q67	D-7
Q68	D-7
Q69	D-7
Q72	C-7
Q73	B-8
Q74	B-8
Q75	B-8
Q76	B-8
Q77	A-8
Q78	B-8
Q79	B-7
Q80	B-7
Q81	B-7
Q82	C-7
Q83	C-7
Q84	C-7
Q85	C-7
Q86	F-8
Q87	E-8
Q88	E-8
Q89	E-8
Q90	E-8
Q91	D-8
Q92	D-8
Q93	E-8
Q94	E-8
Q95	E-4
Q96	D-4
Q97	C-4
Q98	E-4
Q99	D-4
Q100	D-4
Q101	D-4
Q102	D-4
Q103	D-4
Q104	D-4
Q105	D-4
Q106	C-4
Q107	C-4
Q108	C-4
Q109	C-4
Q110	C-4
Q111	C-4
Q112	B-4
Q113	C-4
Q114	B-4
Q115	B-3
Q116	B-3
Q117	B-2
Q118	B-4
Q119	A-4
Q120	A-4
Q121	B-4
Q122	B-4
Q123	B-2
Q124	B-2
Q127	E-3
Q128	E-3
Q129	D-2
Q130	D-2
Q131	D-3
Q132	D-3
Q133	E-3
Q134	D-3
Q135	D-2
Q136	D-2
Q137	D-3
Q138	D-3
Q139	D-2
Q140	D-3
Q141	D-2
Q142	B-2
Q143	A-2
Q144	A-1
Q145	E-6
Q146	D-6
Q147	D-6
Q148	D-6
Q149	C-6
Q150	C-6
Q151	C-6
Q152	C-6
Q153	B-6
Q154	B-5
Q155	B-7
Q156	A-7
Q157	A-7
Q158	A-6
Q159	A-7
Q160	A-6
Q161	A-5
Q162	A-5
Q163	D-5
Q164	D-5
Q165	A-3
Q166	E-6
Q167	C-7
Q170	J-8
Q171	J-8
Q172	E-7
Q173	C-7
Q174	F-8
Q175	A-3
Q176	E-6
Q177	E-6
Q178	A-3
Q179	A-3
RV1	J-8
RV2	K-8
RV3	J-8
RV4	J-8
RV5	J-7
RV6	J-7
RV7	J-6
RV8	L-8
RV9	L-8
RV10	K-8
RV11	K-8
RV12	K-7
RV13	K-7
RV14	K-6
RV15	K-6
RV16	G-3
RV17	I-4
RV19	I-4
RV20	F-4
RV21	I-3
RV22	G-6
RV23	I-8
RV24	I-8(PAL)
RV25	H-8
RV26	H-8(PAL)
RV27	G-8
RV28	D-7
RV29	F-8
RV30	E-8
RV31	B-3
RV32	B-8
RV33	B-8
RV34	E-2
RV35	E-3
RV36	D-3
RV37	B-2
RV38	A-2
RV39	B-6
RV40	C-5
RV41	C-5
RV42	E-5
RV43	L-6
RV44	H-2
RV45	G-4
RV46	G-3
RV47	G-4
RV48	I-6
RV49	B-7
RV50	B-3
RV51	B-1
RV52	C-1
RV53	D-5
S1	J-8
S2	K-8
TH1	E-7
TH2	E-6
TP1	K-7
TP2	I-7
TP3	J-1
TP4	J-6
TP5	K-7
TP6	J-6
TP8	K-6
TP9	G-1
TP10	H-1
TP11	H-1
TP12	J-7
TP13	K-6
TP14	I-3
TP15	H-2
TP16	G-3
TP17	I-5
TP18	I-5
TP19	H-4
TP20	I-5
TP21	E-3
TP22	G-3
TP23	F-7
TP24	H-6
TP25	D-7
TP26	H-6
TP28	G-7
TP29	H-7(PAL)
TP30	C-8
TP31	B-8
TP33	B-7
TP34	F-8
TP35	F-8
TP36	D-8
TP37	D-8
TP38	B-3
TP39	A-4
TP40	A-4
TP41	E-2
TP42	E-2
TP43	E-2
TP44	B-8
TP45	A-7
TP46	C-6
TP47	C-6
TP48	A-5
TP49	A-6
TP50	A-6
TP51	D-5
TP52	C-5
TP53	E-2
TP56	E-4
TP57	C-5
TP58	I-5



SD-17 BOARD

— SOLDERING SIDE —

1-622-189-11

SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

CN1	G-1
CN2	I-6
CN3	I-6
CV1	F-6
CV2	B-8
D1	I-1
D2	I-1
D3	I-1
D4	J-8
D5	J-7
D6	J-7
D7	K-7
D8	K-7
D9	G-2
D12	H-3
D13	F-5
D14	F-7
D15	F-8
D16	G-8
D17	G-8
D18	E-7
D19	C-8
D20	D-4
D21	C-4
D22	D-2
D23	E-5
D24	E-5
D25	J-8
D26	J-8
D27	I-5
D28	C-1
D29	B-1
DL1	B-3
FL1	F-7
FL2	D-8
FL3	E-4
FL4	B-5
IC1	J-8
IC2	J-8
IC3	J-7
IC4	J-6
IC5	K-8
IC6	K-7
IC7	L-7
IC8	L-6
IC9	K-6
IC10	I-4
IC11	I-5
IC12	H-5
IC13	H-5
IC14	I-4
IC15	H-4
IC16	G-5
IC17	G-5
IC18	F-5
IC19	F-5
IC20	G-4
IC21	G-4
IC22	G-5
LV6	H-7
LV7	G-8
LV9	E-7
LV10	C-8
LV11	C-8
LV12	A-7
LV15	D-6
LV16	A-6
IC23	H-4
IC24	G-7
IC25	D-7
IC26	A-4
IC27	E-2
IC28	C-3
IC29	C-2
IC30	B-1
IC31	B-6
IC32	B-5
IC33	A-5
IC34	D-5
IC35	B-3
Q1	I-6
Q2	J-6
Q3	K-5
Q4	K-5
Q5	K-5
Q6	K-4
Q7	K-4
Q8	K-4
Q9	K-2
Q10	K-2
Q11	L-2
Q12	L-2
Q13	F-3
Q14	F-3
Q15	G-3
Q16	G-2
Q17	G-2
Q18	H-2
Q19	G-2
Q20	G-3
Q21	G-3
Q22	G-2
Q23	I-3
Q24	H-4
Q25	H-3
Q26	H-3
Q27	H-3
Q28	H-3
Q29	H-2
Q30	I-3
Q31	I-2
Q32	I-2
Q33	I-2
Q34	I-2
Q35	I-2
Q36	G-7
Q37	H-7
Q38	H-7
Q39	H-7
Q40	G-7
Q41	H-7
Q42	G-7
Q43	F-7
Q44	F-7
Q45	F-7
Q46	F-6
Q47	G-6
Q48	G-6
Q49	G-6
Q50	G-6
Q51	G-6
Q52	H-6
Q53	G-6
Q54	H-6
Q55	I-8
Q56	I-8
Q57	H-8
Q58	I-8
Q59	H-8
Q60	H-8
Q61	G-8
Q62	G-8
Q63	G-8
Q64	E-7
Q65	D-8
Q66	E-8
Q67	D-7
Q68	D-7
Q69	D-7
Q72	C-7
Q73	B-8
Q74	B-8
Q75	B-8
Q76	B-8
Q77	A-8
Q78	B-8
Q79	B-7
Q80	B-7
Q81	B-7
Q82	C-7
Q83	C-7
Q84	C-7
Q85	C-7
Q86	F-8
Q87	E-8
Q88	E-8
Q89	E-8
Q90	E-8
Q91	D-8
Q92	D-8
Q93	E-8
Q94	E-8
Q95	E-4
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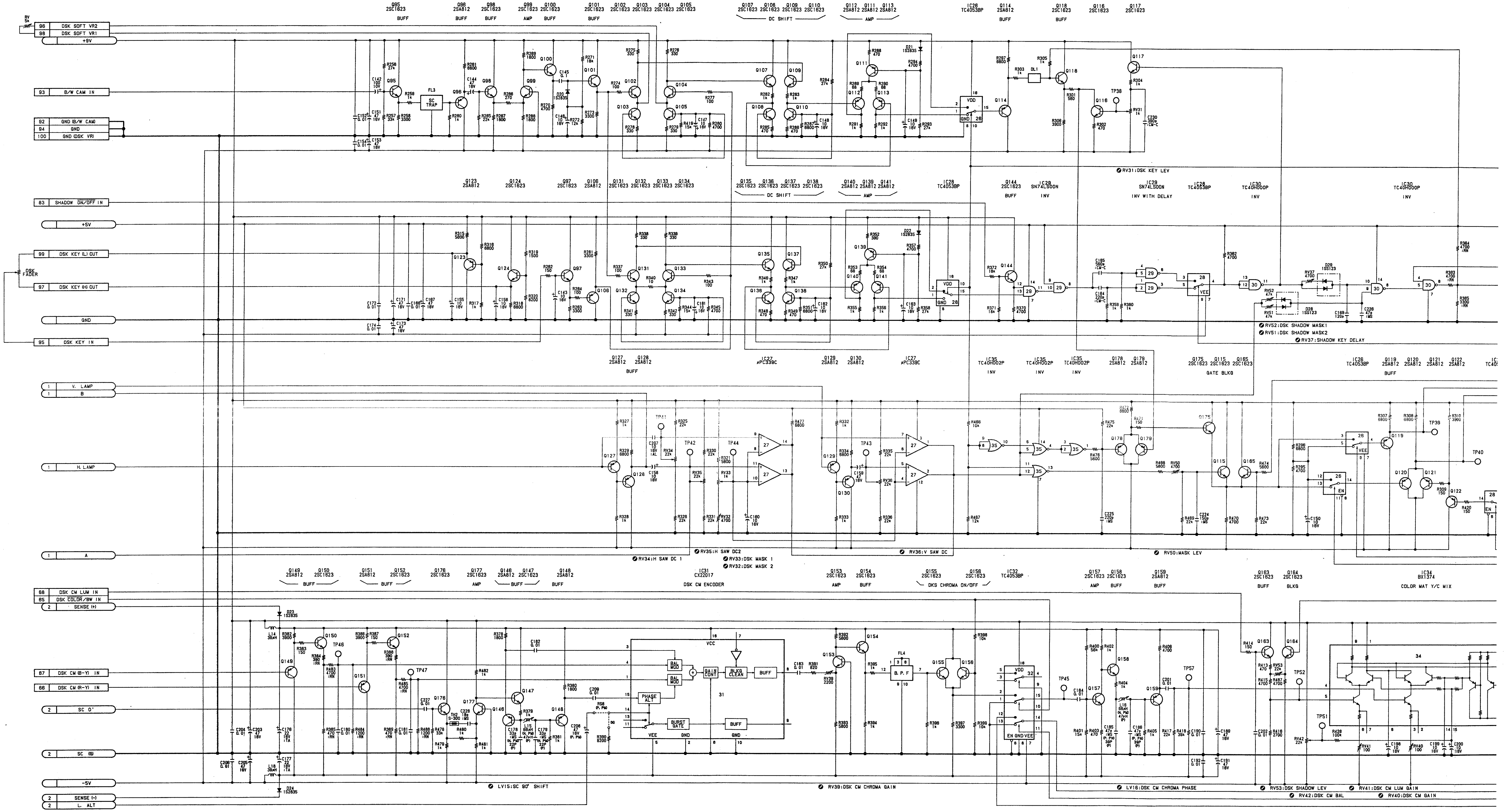
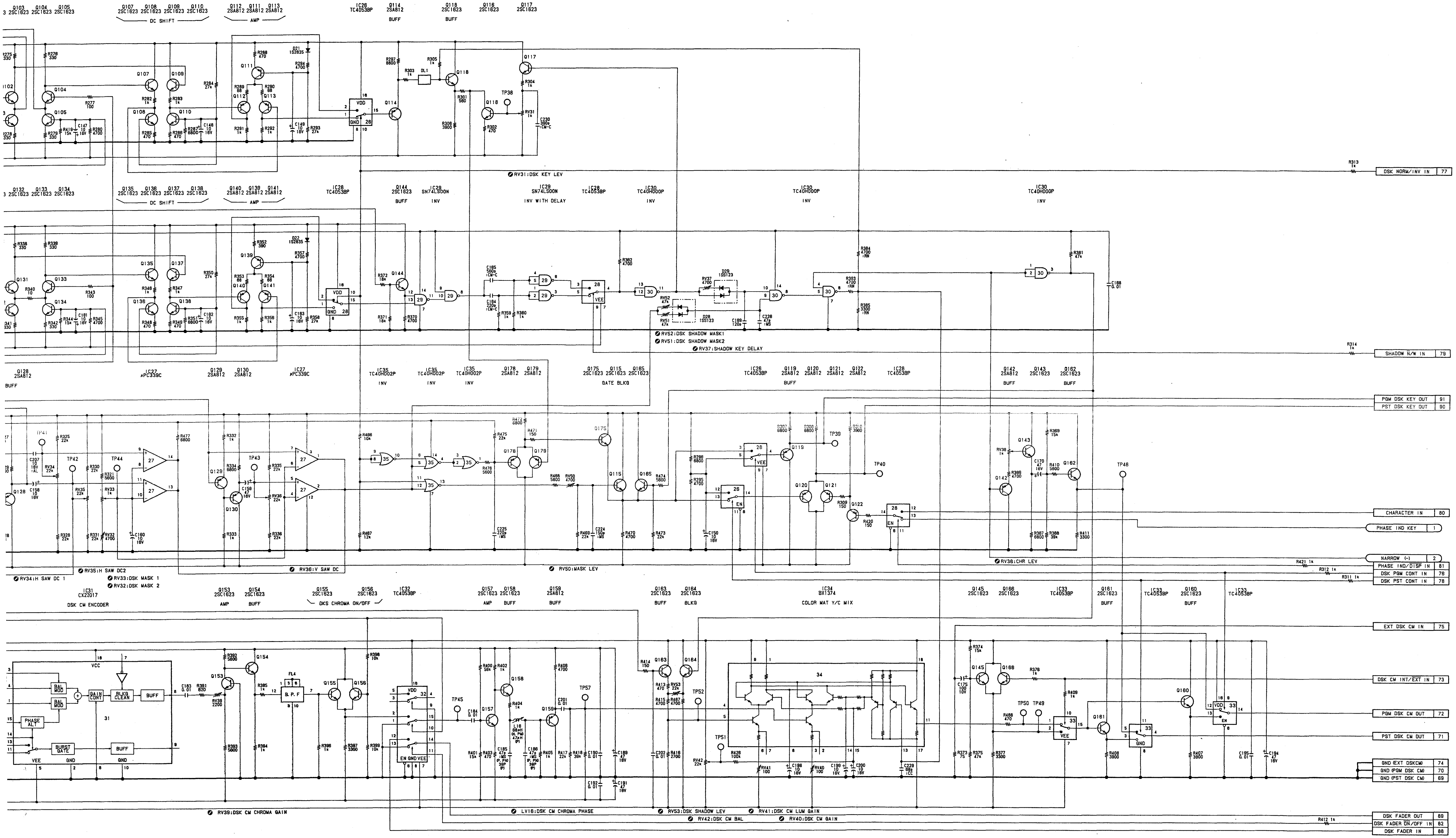
Q105	D-4
Q106	C-4
Q107	C-4
Q108	C-4
Q109	C-4
Q110	C-4
Q111	C-4
Q112	B-4
Q113	C-4
Q114	B-4
Q115	B-3
Q116	B-3
Q117	B-2
Q118	B-4
Q119	A-4
Q120	A-4
Q121	B-4
Q122	B-4
Q123	B-2
Q124	B-2
Q127	E-3
Q128	E-3
Q129	D-2
Q130	D-2
Q131	D-3
Q132	D-3
Q133	E-3
Q134	D-3
Q135	D-2
Q136	D-2
Q137	D-3
Q138	D-3
Q139	D-2
Q140	D-3
Q141	D-2
Q142	B-2
Q143	A-2
Q144	A-1
Q145	E-6
Q146	D-6
Q147	D-6
Q148	D-6
Q149	C-6
Q150	C-6
Q151	C-6
Q152	C-6
Q153	B-6
Q154	B-5
Q155	B-7
Q156	A-7
Q157	A-7
Q158	A-6
Q159	A-7
Q160	A-6
Q161	A-5
Q162	A-5
Q163	D-5
Q164	D-5
Q165	A-3
Q166	E-6
Q167	C-7
Q170	J-8
Q171	J-8
Q172	E-7
Q173	C-7
Q174	F-8
Q175	A-3
Q176	E-6
Q177	E-6
Q178	A-3
Q179	A-3
RV1	J-8
RV2	K-8
RV3	J-8
RV4	J-8
RV5	J-7
RV6	J-7
RV7	J-6
RV8	L-8
RV9	L-8
RV10	K-8
RV11	K-8
RV12	K-7
RV13	K-7
RV14	K-6
RV15	K-6
RV16	G-3
RV17	I-4
RV19	I-4
RV20	F-4
RV21	I-3
RV22	G-6
RV23	I-8
RV24	I-8(PAL)
RV25	H-8
RV26	H-8(PAL)
RV27	G-8
RV28	D-7
RV29	F-8
RV30	E-8
RV31	B-3
RV32	B-8
RV33	B-8
RV34	E-2
RV35	E-3
RV36	D-3
RV37	B-2
RV38	A-2
RV39	B-6
RV40	C-5
RV41	C-5
RV42	E-5
RV43	L-6
RV44	H-2
RV45	G-4
RV46	G-3
RV47	G-4
RV48	I-6
RV49	B-7
RV50	B-3
RV51	B-1
RV52	C-1
RV53	D-5
S1	J-8
S2	K-8
TH1	E-7
TH2	E-6
TP1	K-7
TP2	I-7
TP3	J-1
TP4	J-6
TP5	K-7
TP6	J-6
TP8	K-6
TP9	G-1
TP10	H-1
TP11	H-1
TP12	J-7
TP13	K-6
TP14	I-3
TP15	H-2
TP16	G-3
TP17	I-5
TP18	I-5
TP19	H-4
TP20	I-5
TP21	E-3
TP22	G-3
TP23	F-7
TP24	H-6
TP25	D-7
TP26	H-6
TP28	G-7
TP29	H-7(PAL)
TP30	C-8
TP31	B-8
TP33	B-7
TP34	F-8
TP35	F-8
TP36	D-8
TP37	D-8
TP38	B-3
TP39	A-4
TP40	A-4
TP41	E-2
TP42	E-2
TP43	E-2
TP44	B-8
TP45	A-7
TP46	C-6
TP47	C-6
TP48	A-5
TP49	A-6
TP50	A-6
TP51	D-5
TP52	C-5
TP53	E-2
TP56	E-4
TP57	C-5
TP58	I-5

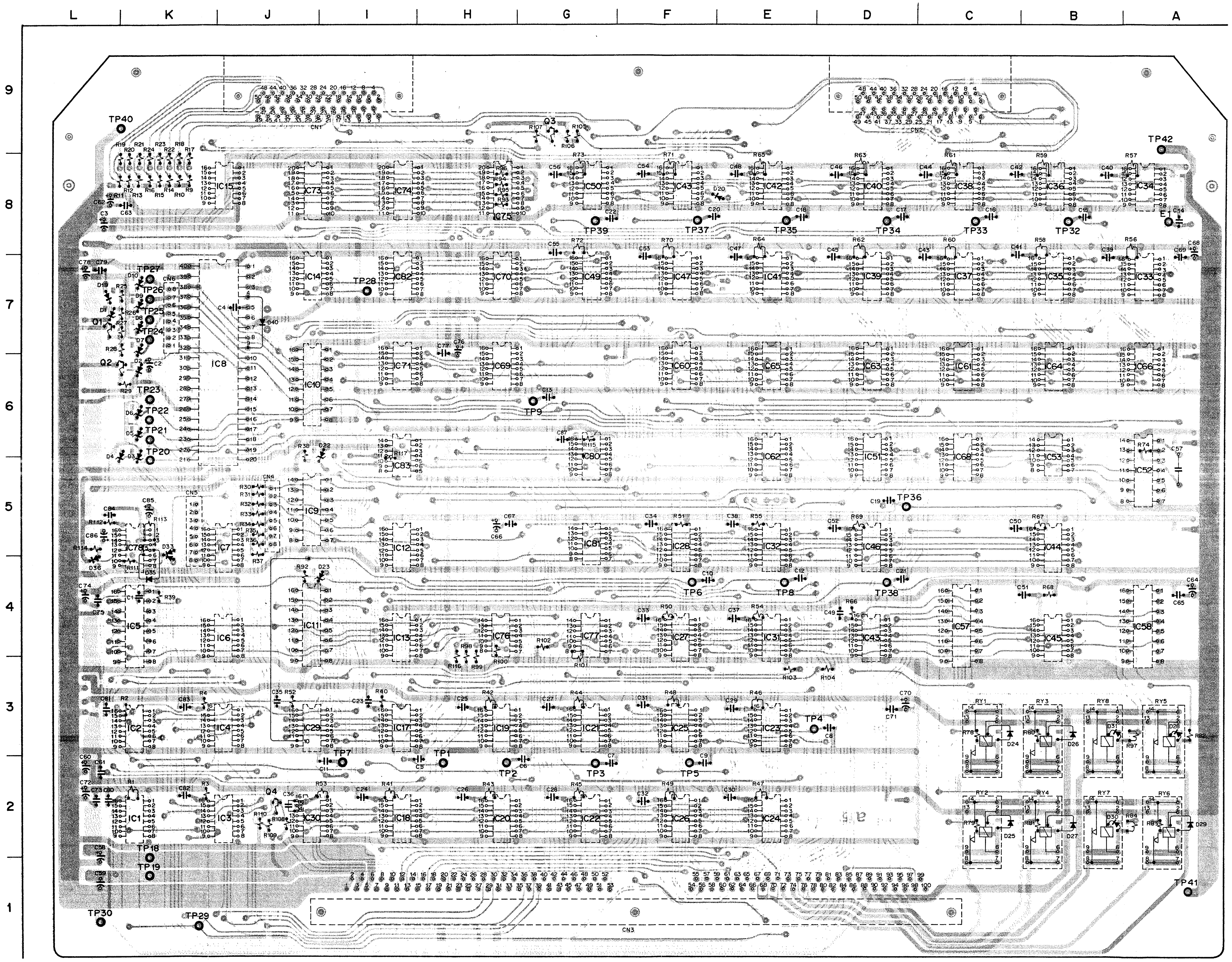
SD-17 (3/3) BOARD


96 DSK SOFT VR2
98 DSK SOFT VR1
+9V
93 B/W CAM IN
92 GND (B/W CAM)
94 GND
100 GND (DSK VR)
83 SHADOW ON/OFF IN
+5V
99 DSK KEY (L) OUT
DSK FADER
97 DSK KEY (H) OUT
GND
95 DSK KEY IN
1 V. LAMP
1 B
1 H. LAMP
1 A
88 DSK CM LUM IN
85 DSK COLOR/BW IN
2 SENSE (+)
87 DSK CM (B-Y) IN
66 DSK CM (R-Y) IN
2 SC 0°
2 SC (G)
-5V
2 SENSE (-)
2 L. ALT
RV31:DSK KEY LEV
RV52:DSK SHADOW MASK1
RV51:DSK SHADOW MASK2
RV37:SHADOW KEY DELAY
RV34:H SAW DC 1
RV35:H SAW DC2
RV33:DSK MASK 1
RV32:DSK MASK 2
RV36:V SAW DC
RV50:MASK LEV
IC31 CX22017 DSK CM ENCODER
IC32 TC4053BP
IC34 BX1374 COLOR MAT Y/C MIX
DKS CHROMA ON/OFF
LV15:SC 90° SHIFT
RV39:DSK CM CHROMA GAIN
LV16:DSK CM CHROMA PHASE
RV53:DSK SHADOW LEV
RV41:DSK CM LUM GAIN
RV42:DSK CM BAL
RV40:DSK CM GAIN


DC SHIFT
AMP
BUFF
INV
INV WITH DELAY
GATE BLKG
DSK CM ENCODER
DKS CHROMA ON/OFF
COLOR MAT Y/C MIX
RV31:DSK KEY LEV
RV52:DSK SHADOW MASK1
RV51:DSK SHADOW MASK2
RV37:SHADOW KEY DELAY
RV35:H SAW DC2
RV34:H SAW DC 1
RV33:DSK MASK 1
RV32:DSK MASK 2
RV36:V SAW DC
RV50:MASK LEV
RV38:CHR LEV
RV39:DSK CM CHROMA GAIN
LV18:DSK CM CHROMA PHASE
RV53:DSK SHADOW LEV
RV41:DSK CM LUM GAIN
RV42:DSK CM BAL
RV40:DSK CM GAIN
DSK NORM/INV IN 77
SHADOW N/W IN 79
PGM DSK KEY OUT 91
PST DSK KEY OUT 90
CHARACTER IN 80
PHASE IND KEY 1
NARROW (-) 2
PHASE IND/DISP IN 81
DSK PGM CONT IN 76
DSK PST CONT IN 78
EXT DSK CM IN 75
DSK CM INT/EXT IN 73
PGM DSK CM OUT 72
PST DSK CM OUT 71
GND (EXT DSKCM) 74
GND (PGM DSK CM) 70
GND (PST DSK CM) 69
DSK FADER OUT 89
DSK FADER ON/OFF IN 82
DSK FADER IN 88

SD-17 BOARD (3/3)
SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

SY-118 BOARD
SY-118A BOARD
SOLDERING SIDE



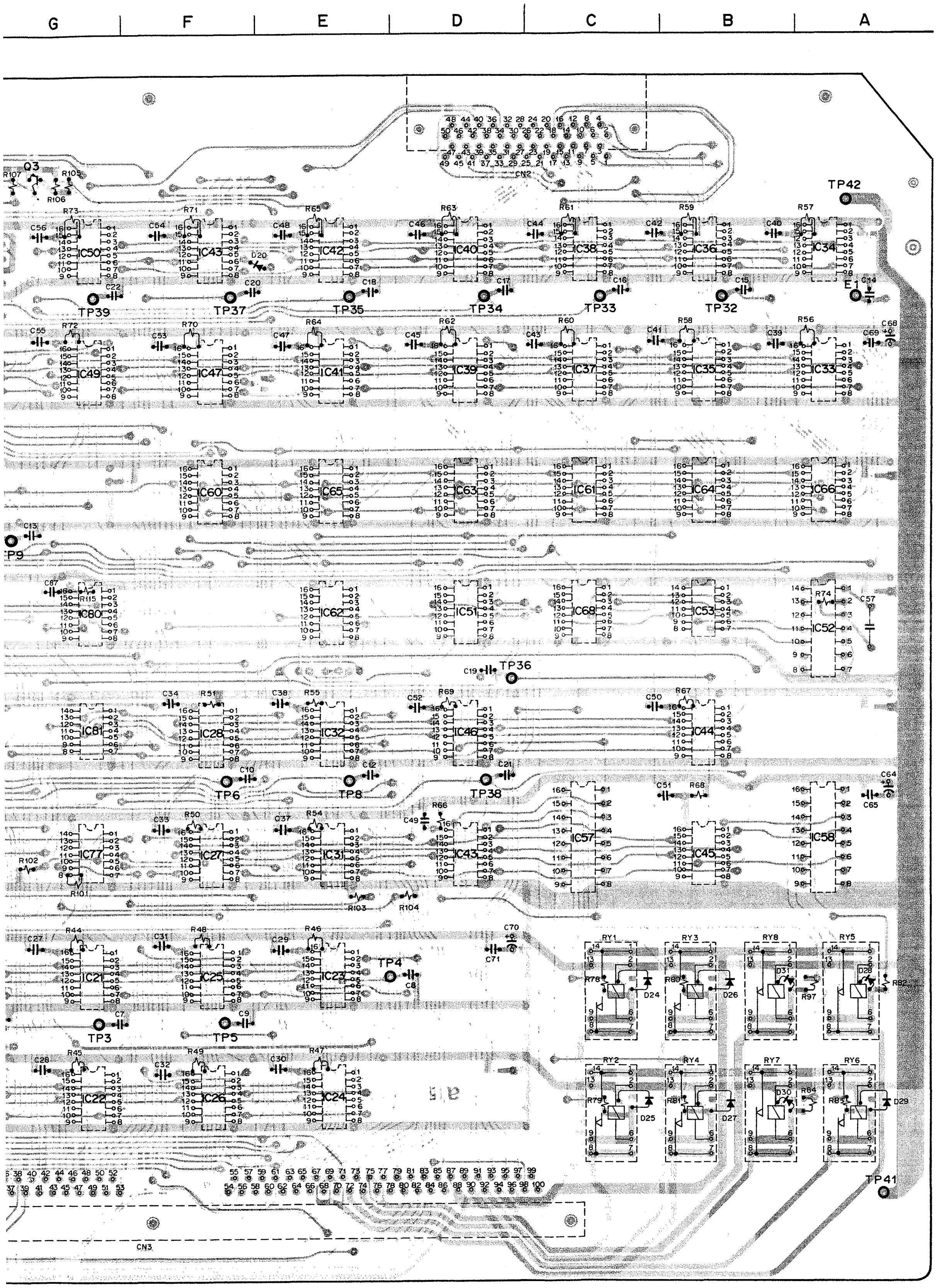
SY-118/118A BOARD

-SOLDERING SIDE-

1-622-188-11

SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)
BK-2551 (J,UC)
BK-2552 (EK)

CN1	I-9
CN2	C-9
CN3	F-1
CN4	J-5
CN5	K-5
CN6	K-7
D1	L-7
D2	K-6
D3	K-5
D4	K-5
D5	K-6
D6	K-6
D7	K-7
D8	K-7
D9	K-7
D10	K-7
D19	L-7
D20	E-8
D21	E-7
D22	J-5
D23	J-4
D24	C-3
D25	C-2
D26	B-3
D27	B-1
D28	A-3
D29	A-2
D30	B-2
D31	B-3
D33	K-4
D35	K-4
D36	L-4
IC1	K-2
IC2	K-3
IC3	J-2
IC4	J-3
IC5	K-4
IC6	J-4
IC7	J-5
IC8	J-6
IC9	J-5
IC10	J-6
IC11	J-4
IC12	I-5
IC13	I-4
IC14	J-7
IC15	J-8
IC17	I-3
IC18	I-2
IC19	H-3
IC20	H-2
IC21	G-3
IC22	G-2
IC23	E-3
IC24	E-2
IC25	F-3
IC26	F-2
IC27	F-4
IC28	F-5
IC29	J-3
IC30	J-2
IC31	E-4
IC32	E-5
IC33	A-7
IC34	A-8
IC35	B-7
IC36	B-8
IC37	C-7
IC38	C-8
IC39	D-7
IC40	D-8
IC41	E-7
IC42	E-8
IC43	D-4
IC44	B-5
IC45	B-4
IC46	D-5
IC47	F-7
IC48	F-8
IC49	G-7
IC50	G-8
IC51	D-5
IC52	A-5
IC53	B-5
IC57	C-4
IC58	A-4
IC60	F-6
IC61	C-6
IC62	E-5
IC63	D-6
IC64	B-6
IC65	E-6
IC66	A-6
IC68	C-5
IC69	H-6
IC70	H-7
IC71	I-6
IC73	J-8
IC74	I-8
IC75	H-8
IC76	H-4
IC77	G-4
IC78	K-5
IC80	G-5
IC81	G-4
IC82	I-7
IC83	I-5
Q1	L-7
Q2	K-6
Q3	G-9
Q4	J-2
RY1	C-3
RY2	C-2
RY3	B-3
RY4	B-2
RY5	A-3
RY6	A-2
RY7	B-2
RY8	B-3
TP1	H-2
TP2	H-2
TP3	G-2
TP4	E-3
TP5	F-2
TP6	F-4
TP7	I-2
TP8	E-4
TP9	H-6
TP18	K-1
TP19	K-1
TP20	K-5
TP21	K-6
TP22	K-6
TP23	K-6
TP24	K-7
TP25	K-7
TP26	K-7
TP27	K-7
TP28	I-7
TP29	K-1
TP30	L-1
TP31	A-8
TP32	B-8
TP33	C-8
TP34	D-8
TP35	E-8
TP36	D-5
TP37	F-8
TP38	D-4
TP39	G-8
TP40	K-9
TP41	A-1
TP42	A-9
X1	J-7


G
F
E
D
C
B
A
CN2
CN3
Q3
TP42
TP39
TP37
TP35
TP34
TP33
TP32
TP9
TP36
TP6
TP8
TP38
TP4
TP3
TP5
TP41
E1
IC50
IC43
IC42
IC40
IC38
IC36
IC34
IC49
IC47
IC41
IC39
IC37
IC35
IC33
IC60
IC65
IC63
IC61
IC64
IC66
IC80
IC62
IC51
IC68
IC53
IC52
IC81
IC28
IC32
IC46
IC44
IC57
IC58
IC77
IC27
IC31
IC43
IC45
IC21
IC25
IC23
IC22
IC26
IC24
RY1
RY3
RY8
RY5
RY2
RY4
RY7
RY6
D24
D26
D25
D27
D29

SY-118/118A BOARD

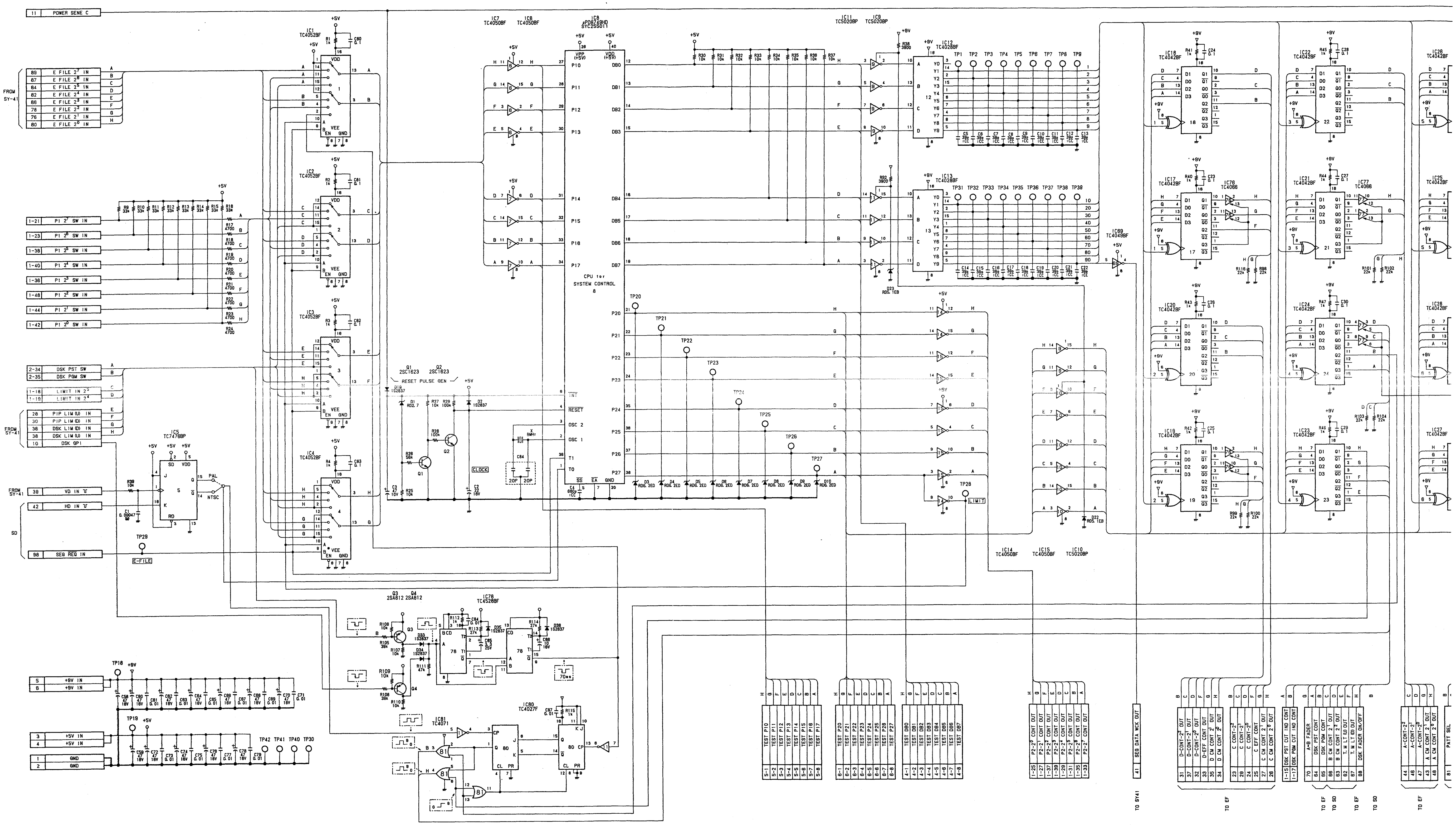
—SOLDERING SIDE—

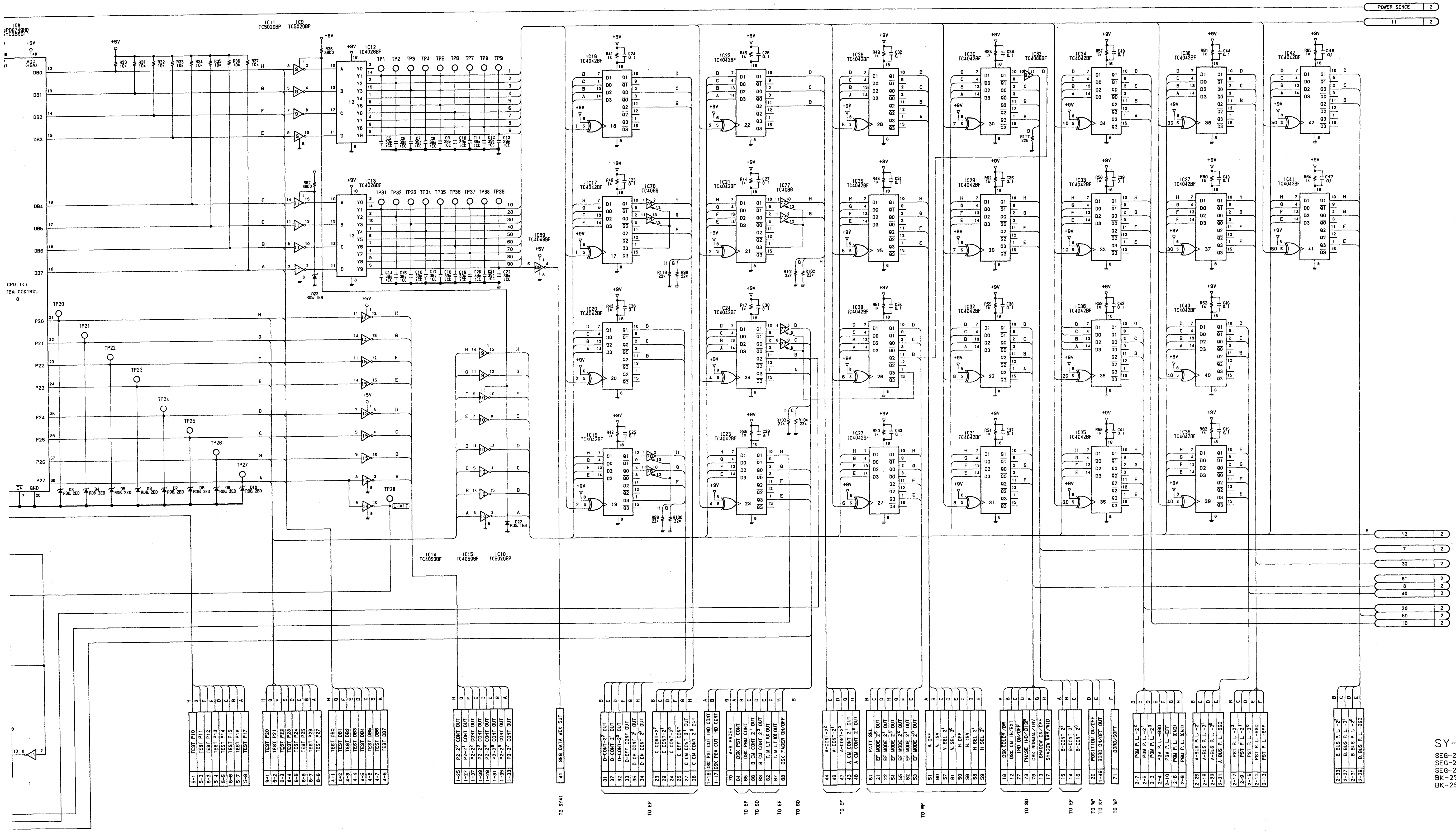
1-622-188-11

SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)
BK-2551 (J,UC)
BK-2552 (EK)

CN1	I-9
CN2	C-9
CN3	F-1
CN4	J-5
CN5	K-5
CN6	K-7
D1	L-7
D2	K-6
D3	K-5
D4	K-5
D5	K-6
D6	K-6
D7	K-7
D8	K-7
D9	K-7
D10	K-7
D19	L-7
D20	E-8
D21	E-7
D22	J-5
D23	J-4
D24	C-3
D25	C-2
D26	B-3
D27	B-1
D28	A-3
D29	A-2
D30	B-2
D31	B-3
D33	K-4
D35	K-4
D36	L-4
IC1	K-2
IC2	K-3
IC3	J-2
IC4	J-3
IC5	K-4
IC6	J-4
IC7	J-5
IC8	J-6
IC9	J-5
IC10	J-6
IC11	J-4
IC12	I-5
IC13	I-4
IC14	J-7
IC15	J-8
IC17	I-3
IC18	I-2
IC19	H-3
IC20	H-2
IC21	G-3
IC22	G-2
IC23	E-3
IC24	E-2
IC25	F-3
IC26	F-2
IC27	F-4
IC28	F-5
IC29	J-3
IC30	J-2
IC31	E-4
IC32	E-5
IC33	A-7
IC34	A-8
IC35	B-7
IC36	B-8
IC37	C-7
IC38	C-8
IC39	D-7
IC40	D-8
IC41	E-7
IC42	E-8
IC43	D-4
IC44	B-5
IC45	B-4
IC46	D-5
IC47	F-7
IC48	F-8
IC49	G-7
IC50	G-8
IC51	D-5
IC52	A-5
IC53	B-5
IC57	C-4
IC58	A-4
IC60	F-6
IC61	C-6
IC62	E-5
IC63	D-6
IC64	B-6
IC65	E-6
IC66	A-6
IC68	C-5
IC69	H-6
IC70	H-7
IC71	I-6
IC73	J-8
IC74	I-8
IC75	H-8
IC76	H-4
IC77	G-4
IC78	K-5
IC80	G-5
IC81	G-4
IC82	I-7
IC83	I-5
Q1	L-7
Q2	K-6
Q3	G-9
Q4	J-2
RY1	C-3
RY2	C-2
RY3	B-3
RY4	B-2
RY5	A-3
RY6	A-2
RY7	B-2
RY8	B-3
TP1	H-2
TP2	H-2
TP3	G-2
TP4	E-3
TP5	F-2
TP6	F-4
TP7	I-2
TP8	E-4
TP9	H-6
TP18	K-1
TP19	K-1
TP20	K-5
TP21	K-6
TP22	K-6
TP23	K-6
TP24	K-7
TP25	K-7
TP26	K-7
TP27	K-7
TP28	I-7
TP29	K-1
TP30	L-1
TP31	A-8
TP32	B-8
TP33	C-8
TP34	D-8
TP35	E-8
TP36	D-5
TP37	F-8
TP38	D-4
TP39	G-8
TP40	K-9
TP41	A-1
TP42	A-9
X1	J-7

SY-118 (1/2) BOARD
SY-118A (1/2) BOARD

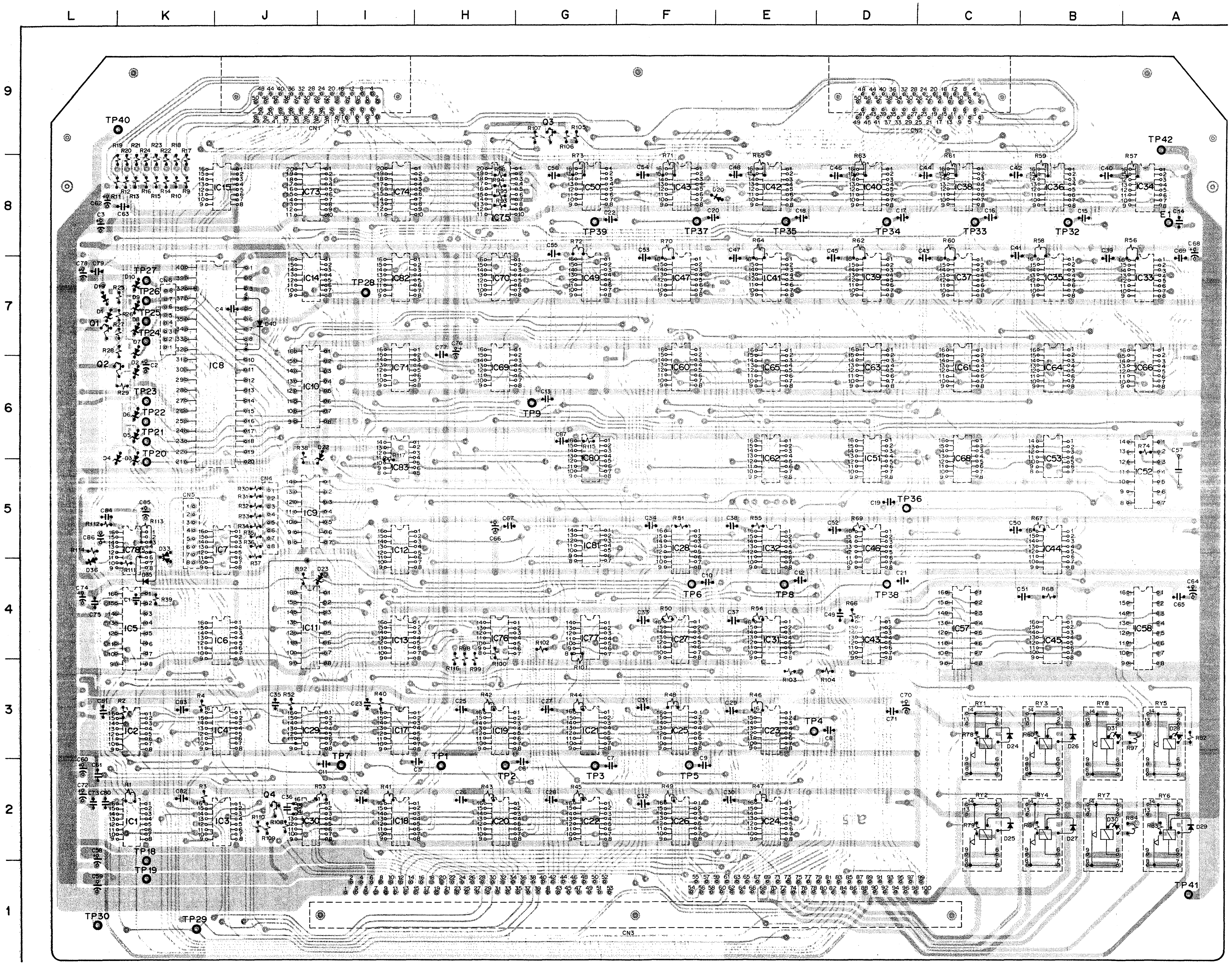

POWER SENE C
FROM SY-41
E FILE 2⁷ IN
P1 2⁷ SW IN
DSK PST SW
DSK PGM SW
LIMIT IN
PIP LIM
DSK LIM
DSK GPI
VD IN
HD IN
SEG REQ IN
+9V IN
+5V IN
GND
TC4052BF
TC4050BF
TC4028BF
TC4042BF
TC4066
TC4049BF
TC7476BP
TC4528BF
TC4027F
TC4071
CPU for SYSTEM CONTROL
RESET PULSE GEN
CLOCK
E-FILE
LIMIT
PAL
NTSC
TO SY41
TO EF
TO SD


POWER SENCE
CPU for
TEM CONTROL
IC11 TC5020BP
IC9 TC5020BP
IC12 TC4028BF
IC13 TC4028BF
IC89 TC4049BF
IC14 TC4050BF
IC15 TC4050BF
IC10 TC5020BP
IC18 TC4042BF
IC17 TC4042BF
IC20 TC4042BF
IC19 TC4042BF
IC78 TC4066
IC77 TC4066
IC82 TC4066BF
LIMIT
TP28
TEST P10
TEST P11
TEST P12
TEST P13
TEST P14
TEST P15
TEST P16
TEST P17
TEST P20
TEST P21
TEST P22
TEST P23
TEST P24
TEST P25
TEST P26
TEST P27
TEST DB0
TEST DB1
TEST DB2
TEST DB3
TEST DB4
TEST DB5
TEST DB6
TEST DB7
P2-2^0 CONT OUT
P2-2^1 CONT OUT
P2-2^2 CONT OUT
P2-2^3 CONT OUT
P2-2^4 CONT OUT
P2-2^5 CONT OUT
P2-2^6 CONT OUT
P2-2^7 CONT OUT
SEG DATA WCK OUT
TO SY41
D-CONT-2^2 OUT
D-CONT-2^1 OUT
D-CONT-2^0 OUT
D-EFF CONT OUT
D CM CONT 2^1 OUT
D CM CONT 2^0 OUT
C CONT-2^2
C CONT-2^1
C CONT-2^0
C EFF CONT
C CM CONT 2^1 OUT
C CM CONT 2^0 OUT
TO EF
DSK PST CUT IND CONT
DSK PGM CUT IND CONT
A-B FADER
DSK PST CONT
DSK PGM CONT
B CM CONT 2^1 OUT
B CM CONT 2^2 OUT
T. M LT (U) OUT
T. M LT (D) OUT
DSK FADER ON/OFF
TO EF
TO SD
TO EF
TO SD
A-CONT-2^2
A-CONT-2^1
A-CONT-2^0
A CM CONT 2^1 OUT
A CM CONT 2^0 OUT
TO EF
PATT SEL
EF MODE 2^5 OUT
EF MODE 2^4 OUT
EF MODE 2^3 OUT
EF MODE 2^2 OUT
EF MODE 2^1 OUT
EF MODE 2^0 OUT
V. OFF
V. INV
V. SEL 2^1
V. SEL 2^0
H. OFF
H. INV
H SEL 2^1
H SEL 2^0
TO WP
DSK COLOR/BW
DSK CM IN/EXT
IND ON/OFF
PHASE IND/DISP
DSK NORMAL/INV
SHADOW ON/OFF
SHADOW NAR/WID
TO SD
B-CONT 2^2
B-CONT 2^1
B-CONT 2^0
TO EF
POSITION ON/OFF
BORD ON/OFF OUT
TO WP
TO KY
BORD/SOFT
TO WP
PGM P. L. -2^2
PGM P. L. -2^1
PGM P. L. -2^0
PGM P. L. -BGD
PGM P. L. -EFF
PGM P. L. (CM2)
PGM P. L. (CM1)
A-BUS P. L. -2^2
A-BUS P. L. -2^1
A-BUS P. L. -2^0
A-BUS P. L. -BGD
PST P. L. -2^2
PST P. L. -2^1
PST P. L. -2^0
PST P. L. -BGD
PST P. L. -EFF
B. BUS P. L. -2^2
B. BUS P. L. -2^1
B. BUS P. L. -2^0
B. BUS P. L. -BGD

SY-118/118A BOARD (1/2)

SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)
BK-2551 (J) (UC)
BK-2552 (EK)

SY-118 BOARD
SY-118A BOARD
SOLDERING SIDE


L
K
J
I
H
G
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E
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C
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A
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3
4
5
6
7
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CN1
CN2
CN3
CN4
CN5
TP40
TP42
TP39
TP37
TP35
TP34
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TP28
TP27
TP26
TP25
TP24
TP23
TP22
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TP20
TP9
TP36
TP6
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TP38
TP4
TP7
TP1
TP2
TP3
TP5
TP18
TP19
TP41
TP30
TP29
RY1
RY3
RY8
RY5
RY2
RY4
RY7
RY6
Q1
Q2
Q3
Q4
IC8

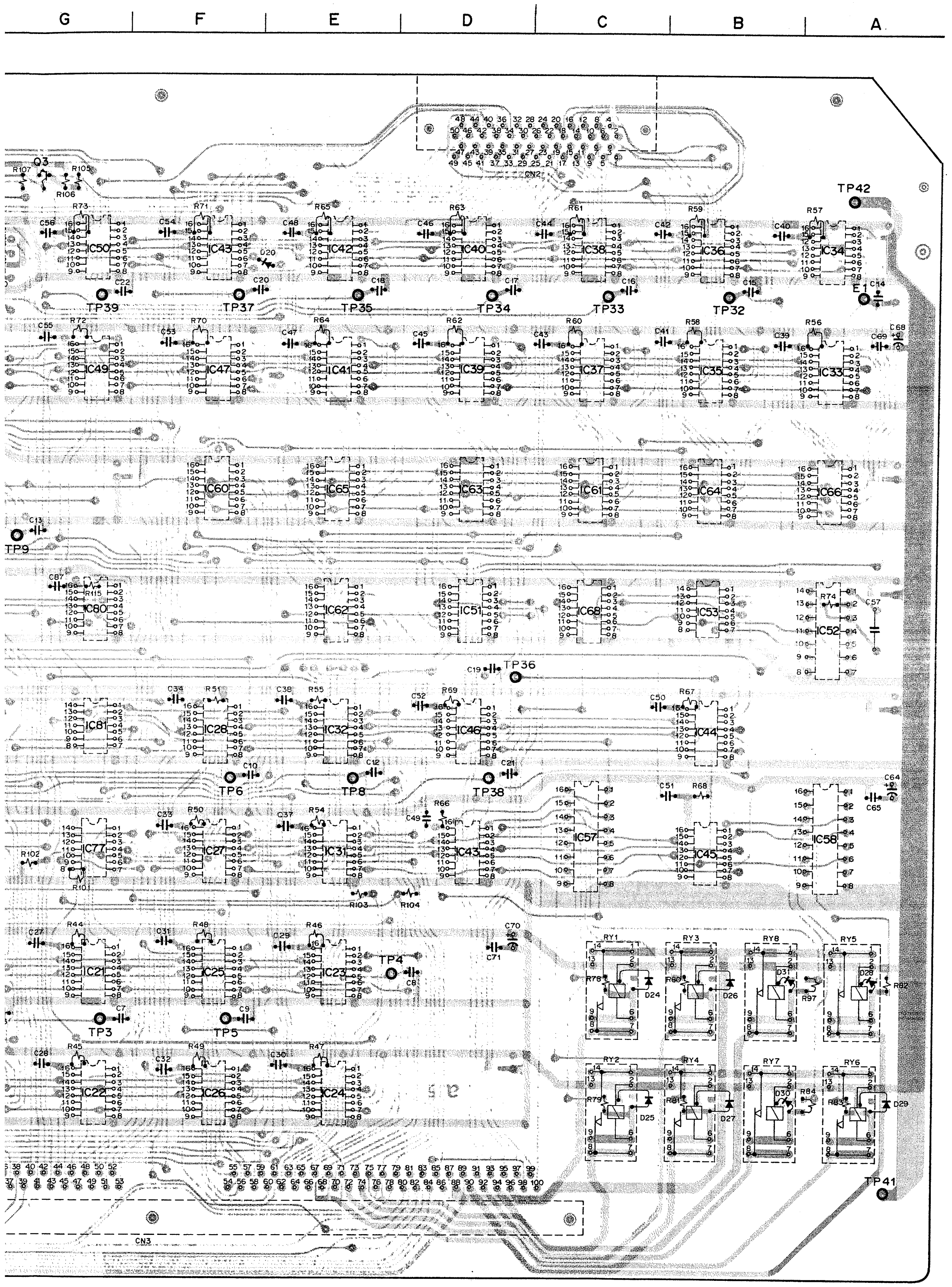
CN1	I-9
CN2	C-9
CN3	F-1
CN4	J-5
CN5	K-5
CN6	K-7
D1	L-7
D2	K-6
D3	K-5
D4	K-5
D5	K-6
D6	K-6
D7	K-7
D8	K-7
D9	K-7
D10	K-7
D19	L-7
D20	E-8
D21	E-7
D22	J-5
D23	J-4
D24	C-3
D25	C-2
D26	B-3
D27	B-1
D28	A-3
D29	A-2
D30	B-2
D31	B-3
D33	K-4
D35	K-4
D36	L-4
IC1	K-2
IC2	K-3
IC3	J-2
IC4	J-3
IC5	K-4
IC6	J-4
IC7	J-5
IC8	J-6
IC9	J-5
IC10	J-6
IC11	J-4
IC12	I-5
IC13	I-4
IC14	J-7
IC15	J-8
IC17	I-3
IC18	I-2
IC19	H-3
IC20	H-2
IC21	G-3
IC22	G-2
IC23	E-3
IC24	E-2
IC25	F-3
IC26	F-2
IC27	F-4
IC28	F-5
IC29	J-3
IC30	J-2
IC31	E-4
IC32	E-5
IC33	A-7
IC34	A-8
IC35	B-7
IC36	B-8
IC37	C-7
IC38	C-8
IC39	D-7
IC40	D-8
IC41	E-7
IC42	E-8
IC43	D-4
IC44	B-5
IC45	B-4
IC46	D-5
IC47	F-7
IC48	F-8
IC49	G-7
IC50	G-8
IC51	D-5
IC52	A-5
IC53	B-5
IC57	C-4
IC58	A-4
IC60	F-6
IC61	C-6
IC62	E-5
IC63	D-6
IC64	B-6
IC65	E-6
IC66	A-6
IC68	C-5
IC69	H-6
IC70	H-7
IC71	I-6
IC73	J-8
IC74	I-8
IC75	H-8
IC76	H-4
IC77	G-4
IC78	K-5
IC80	G-5
IC81	G-4
IC82	I-7
IC83	I-5
Q1	L-7
Q2	K-6
Q3	G-9
Q4	J-2
RY1	C-3
RY2	C-2
RY3	B-3
RY4	B-2
RY5	A-3
RY6	A-2
RY7	B-2
RY8	B-3
TP1	H-2
TP2	H-2
TP3	G-2
TP4	E-3
TP5	F-2
TP6	F-4
TP7	I-2
TP8	E-4
TP9	H-6
TP18	K-1
TP19	K-1
TP20	K-5
TP21	K-6
TP22	K-6
TP23	K-6
TP24	K-7
TP25	K-7
TP26	K-7
TP27	K-7
TP28	I-7
TP29	K-1
TP30	L-1
TP31	A-8
TP32	B-8
TP33	C-8
TP34	D-8
TP35	E-8
TP36	D-5
TP37	F-8
TP38	D-4
TP39	G-8
TP40	K-9
TP41	A-1
TP42	A-9
X1	J-7

SY-118/118A BOARD

-SOLDERING SIDE-

1-622-188-11

SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)
BK-2551 (J,UC)
BK-2552 (EK)


G
F
E
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C
B
A
CN2
CN3
TP42
TP41
TP39
TP37
TP35
TP34
TP33
TP32
TP36
TP38
TP9
TP6
TP8
TP4
TP3
TP5
E1
Q3
IC50
IC48
IC42
IC40
IC38
IC36
IC34
IC49
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IC31
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IC57
IC45
IC58
IC21
IC25
IC23
IC22
IC26
IC24
RY1
RY3
RY8
RY5
RY2
RY4
RY7
RY6

SY-118/118A BOARD

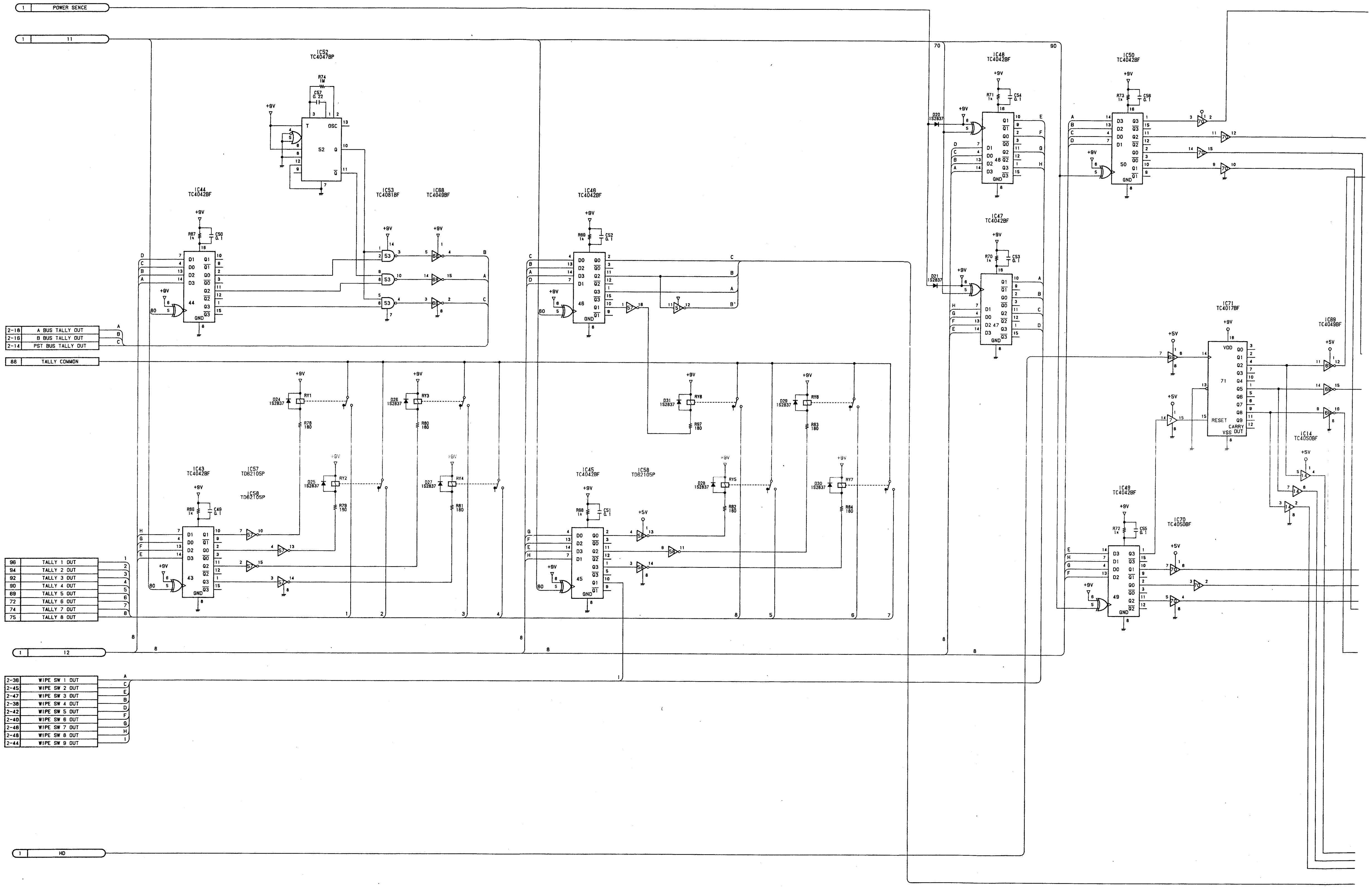
-SOLDERING SIDE-

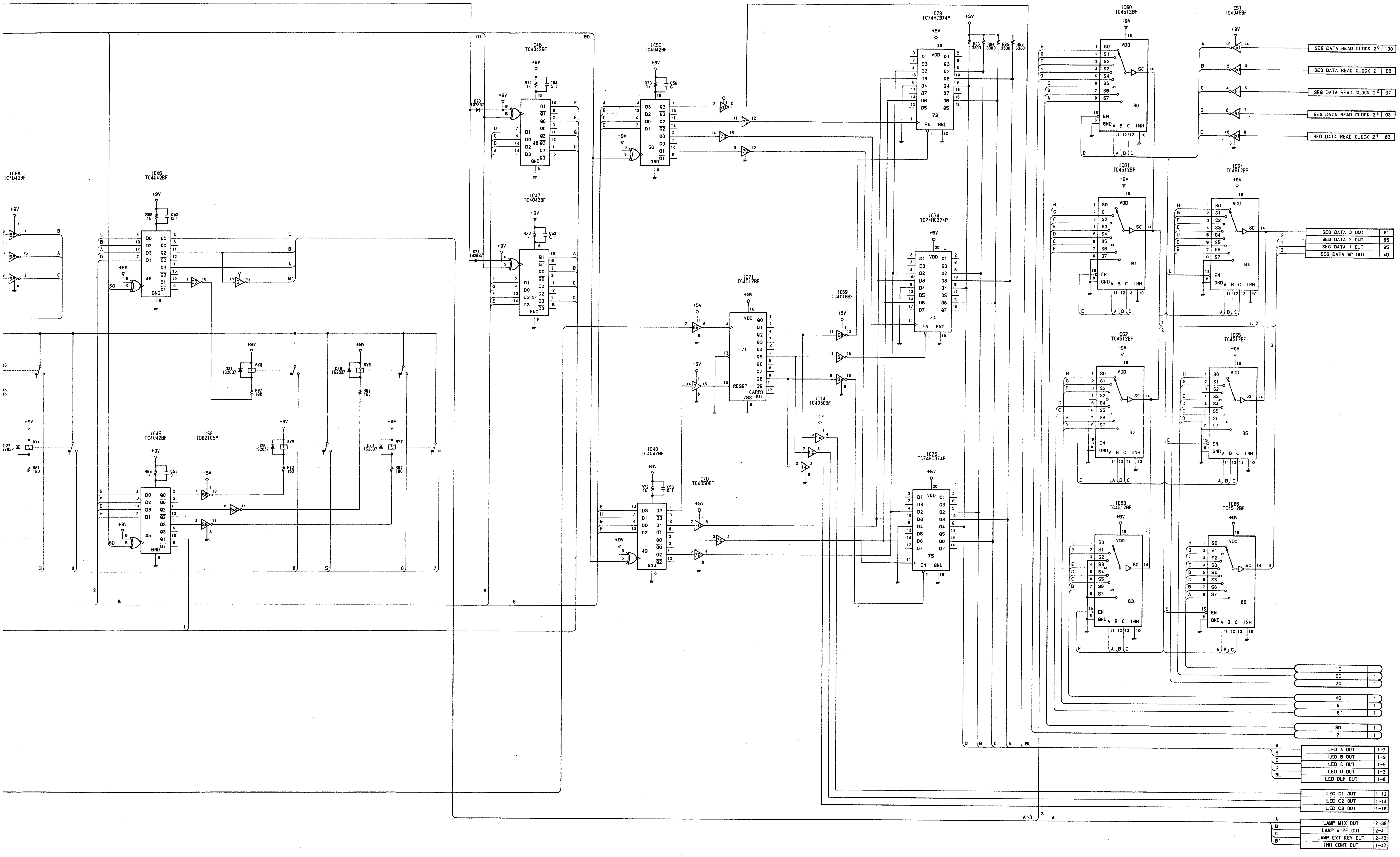
1-622-188-11

SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)
BK-2551 (J,UC)
BK-2552 (EK)

CN1	I-9
CN2	C-9
CN3	F-1
CN4	J-5
CN5	K-5
CN6	K-7
D1	L-7
D2	K-6
D3	K-5
D4	K-5
D5	K-6
D6	K-6
D7	K-7
D8	K-7
D9	K-7
D10	K-7
D19	L-7
D20	E-8
D21	E-7
D22	J-5
D23	J-4
D24	C-3
D25	C-2
D26	B-3
D27	B-1
D28	A-3
D29	A-2
D30	B-2
D31	B-3
D33	K-4
D35	K-4
D36	L-4
IC1	K-2
IC2	K-3
IC3	J-2
IC4	J-3
IC5	K-4
IC6	J-4
IC7	J-5
IC8	J-6
IC9	J-5
IC10	J-6
IC11	J-4
IC12	I-5
IC13	I-4
IC14	J-7
IC15	J-8
IC17	I-3
IC18	I-2
IC19	H-3
IC20	H-2
IC21	G-3
IC22	G-2
IC23	E-3
IC24	E-2
IC25	F-3
IC26	F-2
IC27	F-4
IC28	F-5
IC29	J-3
IC30	J-2
IC31	E-4
IC32	E-5
IC33	A-7
IC34	A-8
IC35	B-7
IC36	B-8
IC37	C-7
IC38	C-8
IC39	D-7
IC40	D-8
IC41	E-7
IC42	E-8
IC43	D-4
IC44	B-5
IC45	B-4
IC46	D-5
IC47	F-7
IC48	F-8
IC49	G-7
IC50	G-8
IC51	D-5
IC52	A-5
IC53	B-5
IC57	C-4
IC58	A-4
IC60	F-6
IC61	C-6
IC62	E-5
IC63	D-6
IC64	B-6
IC65	E-6
IC66	A-6
IC68	C-5
IC69	H-6
IC70	H-7
IC71	I-6
IC73	J-8
IC74	I-8
IC75	H-8
IC76	H-4
IC77	G-4
IC78	K-5
IC80	G-5
IC81	G-4
IC82	I-7
IC83	I-5
Q1	L-7
Q2	K-6
Q3	G-9
Q4	J-2
RY1	C-3
RY2	C-2
RY3	B-3
RY4	B-2
RY5	A-3
RY6	A-2
RY7	B-2
RY8	B-3
TP1	H-2
TP2	H-2
TP3	G-2
TP4	E-3
TP5	F-2
TP6	F-4
TP7	I-2
TP8	E-4
TP9	H-6
TP18	K-1
TP19	K-1
TP20	K-5
TP21	K-6
TP22	K-6
TP23	K-6
TP24	K-7
TP25	K-7
TP26	K-7
TP27	K-7
TP28	I-7
TP29	K-1
TP30	L-1
TP31	A-8
TP32	B-8
TP33	C-8
TP34	D-8
TP35	E-8
TP36	D-5
TP37	F-8
TP38	D-4
TP39	G-8
TP40	K-9
TP41	A-1
TP42	A-9
X1	J-7

SY-118 (2/2) BOARD
SY-118A (2/2) BOARD


POWER SENCE
11
IC52 TC4047BP
IC44 TC4042BF
IC53 TC4081BF
IC68 TC4049BF
IC46 TC4042BF
IC48 TC4042BF
IC50 TC4042BF
IC47 TC4042BF
IC71 TC4017BF
IC69 TC4049BF
IC14 TC4050BF
IC49 TC4042BF
IC70 TC4050BF
IC43 TC4042BF
IC57 TD62105P
IC58 TD62105P
IC45 TC4042BF
IC58 TD62105P
2-18 A BUS TALLY OUT
2-16 B BUS TALLY OUT
2-14 PST BUS TALLY OUT
88 TALLY COMMON
96 TALLY 1 OUT
94 TALLY 2 OUT
92 TALLY 3 OUT
90 TALLY 4 OUT
69 TALLY 5 OUT
72 TALLY 6 OUT
74 TALLY 7 OUT
75 TALLY 8 OUT
12
2-36 WIPE SW 1 OUT
2-45 WIPE SW 2 OUT
2-47 WIPE SW 3 OUT
2-38 WIPE SW 4 OUT
2-42 WIPE SW 5 OUT
2-40 WIPE SW 6 OUT
2-46 WIPE SW 7 OUT
2-48 WIPE SW 8 OUT
2-44 WIPE SW 9 OUT
HD

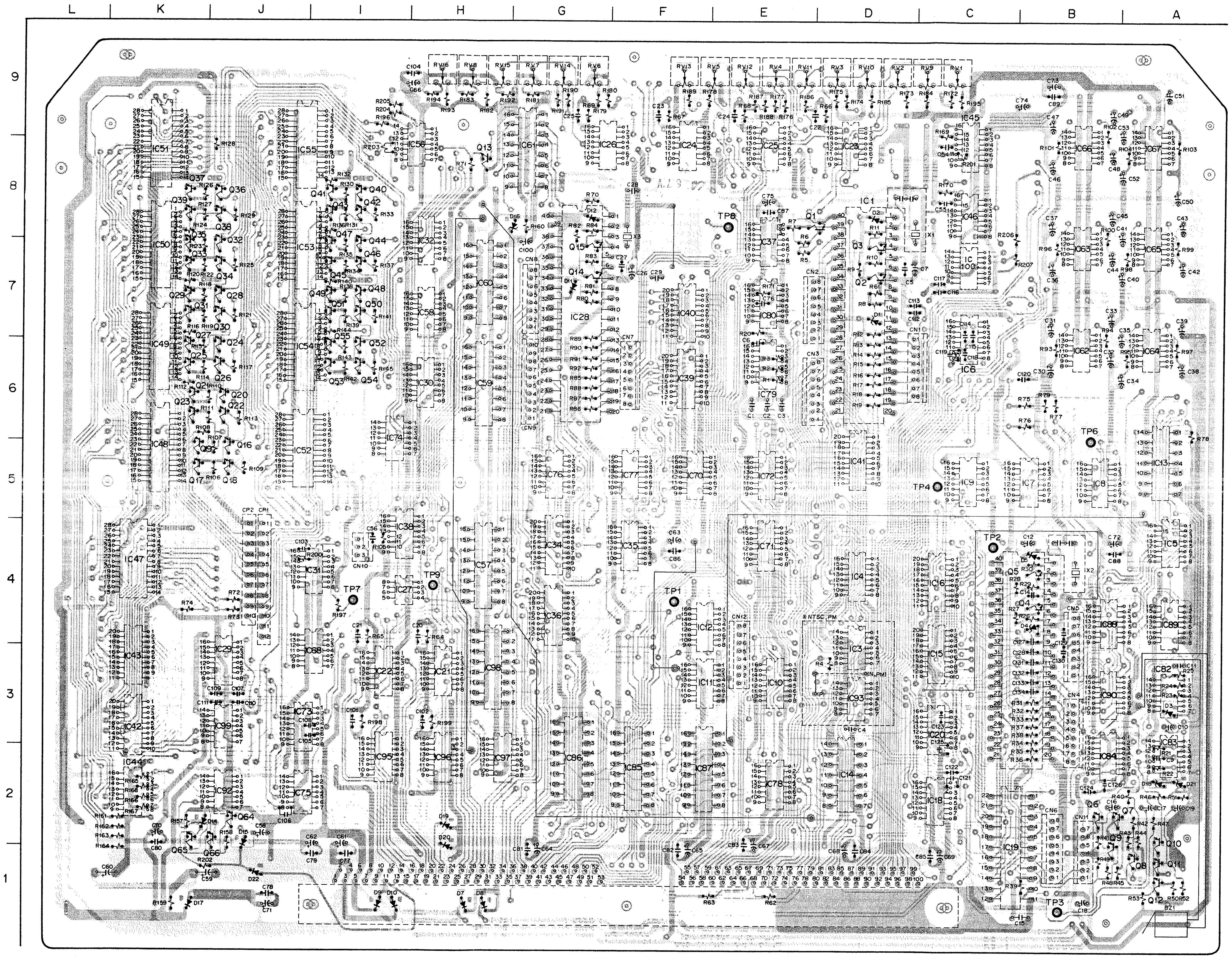

IC66 TC4049BF
IC46 TC4042BF
IC48 TC4042BF
IC47 TC4042BF
IC50 TC4042BF
IC73 TC74HC374P
IC74 TC74HC374P
IC75 TC74HC374P
IC71 TC4017BF
IC69 TC4049BF
IC14 TC4050BF
IC45 TC4042BF
IC58 TD62105P
IC49 TC4042BF
IC70 TC4050BF
IC60 TC4512BF
IC51 TC4049BF
IC61 TC4512BF
IC64 TC4512BF
IC62 TC4512BF
IC65 TC4512BF
IC63 TC4512BF
IC66 TC4512BF
SEG DATA READ CLOCK 2⁰ 100
SEG DATA READ CLOCK 2¹ 99
SEG DATA READ CLOCK 2² 97
SEG DATA READ CLOCK 2³ 93
SEG DATA READ CLOCK 2⁴ 83
SEG DATA 3 OUT 91
SEG DATA 2 OUT 85
SEG DATA 1 OUT 95
SEG DATA WP OUT 40
10 1
50 1
20 1
40 1
8 1
8' 1
30 1
7 1
LED A OUT 1-7
LED B OUT 1-9
LED C OUT 1-5
LED D OUT 1-3
LED BLK OUT 1-8
LED C1 OUT 1-12
LED C2 OUT 1-14
LED C3 OUT 1-16
LAMP MIX OUT 2-39
LAMP WIPE OUT 2-41
LAMP EXT KEY OUT 2-43
INH CONT OUT 1-47

SY-118/118A BOARD (2/2)

SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)
BK-2551 (J) (UC)
BK-2552 (EK)

SY-41A BOARD
SOLDERING SIDE

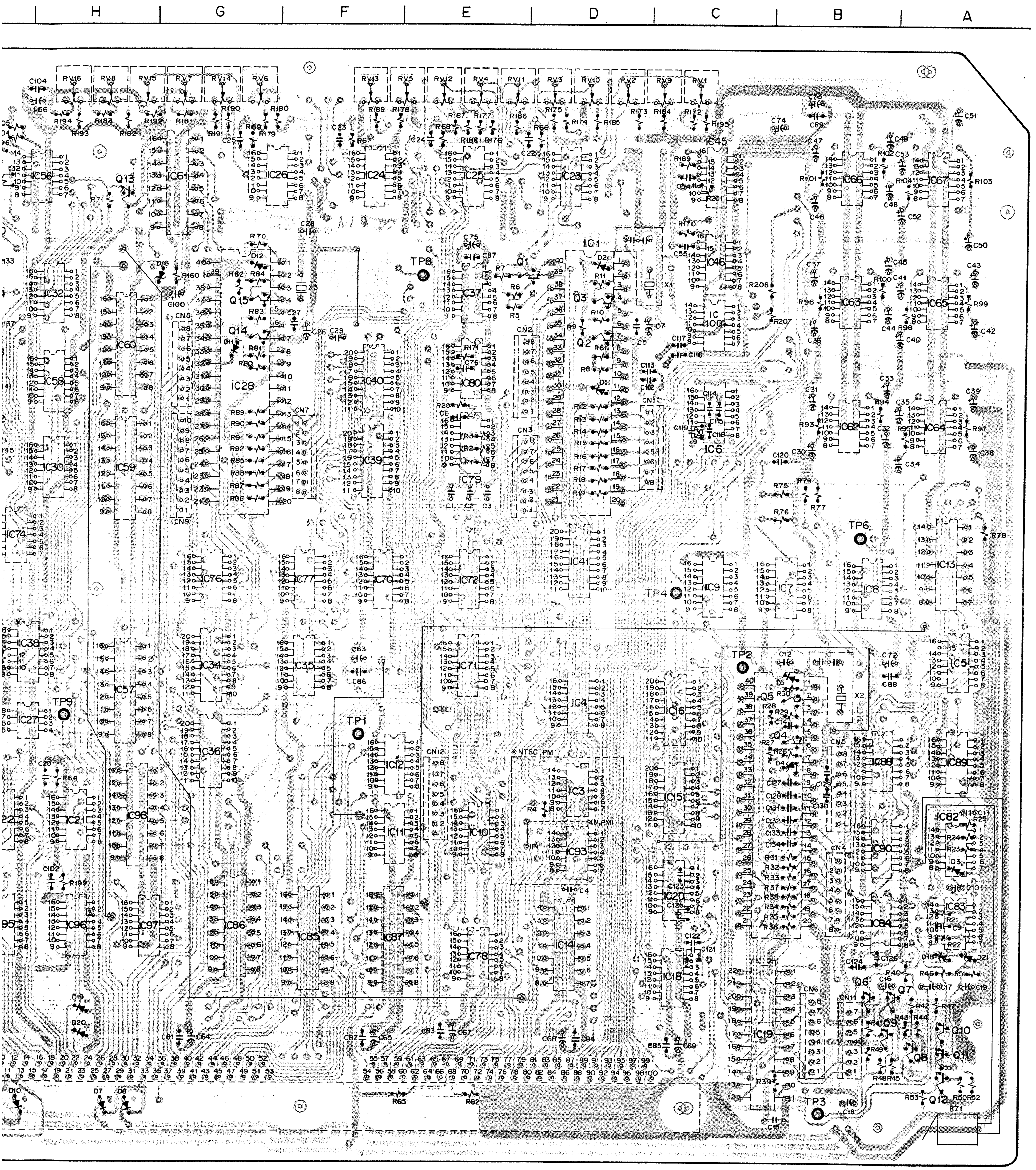
BZ1	A -1
CN1	C -6
CN2	E -7
CN3	E -6
CN4	B -3
CN5	B -4
CN6	B -2
CN7	F -6
CN8	G -7
CN9	G -6
CN10	I -4
CN11	B -1
CN12	E -3
CN13	F -1
CP1	J -4
CP2	J -4
D1	D -7
D2	D -8
D3	A -3
D4	B -3
D5	B -4
D7	H -1
D8	H -1
D9	I -1
D10	I -1
D11	G -7
D12	G -8
D14	K -2
D15	J -2
D16	G -8
D17	K -1
D18	A -2
D19	H -2
D20	H -2
D21	A -2
D22	J -1
IC1	D -7
IC3	D -3
IC4	D -4
IC5	A -5
IC6	C -7
IC7	B -5
IC8	B -5
IC9	C -5
IC10	E -3
IC11	F -3
IC12	F -4
IC13	A -5
IC14	D -2
IC15	C -3
IC16	C -5
IC17	B -3
IC18	C -2
IC19	C -2
IC20	C -3
IC21	H -3
IC22	I -3
IC23	D -8
IC24	F -8
IC25	E -8
IC26	G -8
IC27	I -4
IC28	G -7
IC29	J -3
IC30	H -6
IC31	I -4
IC32	H -8
IC34	G -5
IC35	F -5
IC36	G -4
IC37	E -8
IC38	I -5
IC39	F -6
IC40	F -7
IC41	D -5
IC42	K -3
IC43	K -3
IC44	K -2
IC45	C -8
IC46	C -8
IC47	K -4
IC48	K -5
IC49	K -6
IC50	K -7
IC51	K -8
IC52	J -5
IC53	J -7
IC54	J -6
IC55	J -8
IC56	H -8
IC57	H -4
IC58	H -7
IC59	H -6
IC60	H -7
IC61	G -8
IC62	B -6
IC63	B -7
IC64	A -6
IC65	A -7
IC66	B -8
IC67	A -8
IC68	I -3
IC70	F -5
IC71	E -4
IC72	E -5
IC73	J -3
IC74	I -6
IC75	J -2
IC76	G -5
IC77	F -5
IC78	E -2
IC79	E -6
IC80	E -7
IC82	A -3
IC83	A -2
IC84	B -2
IC85	F -2
IC86	G -2
IC87	F -2
IC88	B -4
IC89	A -4
IC90	B -3
IC92	J -2
IC93	D -3
IC95	I -2
IC96	H -2
IC97	H -2
IC98	H -3
IC99	J -3
Q1	D -8
Q2	D -7
Q3	D -7
Q4	B -4
Q5	B -4
Q6	B -2
Q7	A -2
Q8	A -1
Q9	B -2
Q10	A -2
Q11	A -1
Q12	A -1
Q13	H -8
Q14	G -7
Q15	G -7
Q16	J -5
Q17	K -5
Q18	J -5
Q19	K -5
Q20	J -6
Q21	K -6
Q22	J -6
Q23	K -6
Q24	J -7
Q25	K -6
Q26	J -6
Q27	K -6
Q28	J -7
Q29	K -7
Q30	J -7
Q31	K -7
Q32	J -8
Q33	K -7
Q34	J -7
Q35	K -8
Q36	J -8
Q37	K -8
Q38	J -8
Q39	K -8
Q40	I -8
Q41	I -8
Q42	I -8
Q43	I -8
Q44	I -7
Q45	I -7
Q46	I -7
Q47	I -8
Q48	I -7
Q49	I -7
Q50	I -7
Q51	I -7
Q52	I -6
Q53	I -6
Q54	I -6
Q55	I -6
Q64	J -2
Q65	K -2
Q66	J -2
RV1	C -9
RV2	D -9
RV3	D -9
RV4	E -9
RV5	E -9
RV6	G -9
RV7	G -9
RV8	H -9
RV9	C -9
RV10	D -9
RV11	E -9
RV12	E -9
RV13	F -9
RV14	G -9
RV15	H -9
RV16	H -9
TP1	F -5
TP2	C -5
TP3	A -1
TP4	C -5
TP6	B -6
TP7	I -4
TP8	E -8
TP9	H -4
X1	D -8
X2	B -4
X3	F -8



SY-41A BOARD

—SOLDERING SIDE—

1-617-832-15
SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)


H
G
F
E
D
C
B
A
TP1
TP2
TP3
TP4
TP6
TP8
TP9
IC1
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC18
IC19
IC20
IC21
IC23
IC24
IC25
IC26
IC27
IC28
IC30
IC32
IC34
IC35
IC36
IC37
IC38
IC39
IC40
IC41
IC45
IC46
IC56
IC57
IC58
IC59
IC60
IC61
IC62
IC63
IC64
IC65
IC66
IC67
IC70
IC71
IC72
IC74
IC76
IC77
IC78
IC79
IC80
IC82
IC83
IC84
IC85
IC86
IC87
IC88
IC89
IC90
IC93
IC96
IC97
IC98
IC100
CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN8
CN9
CN11
CN12
X1
X2
BZ1
※NTSC,PM
※N,PM

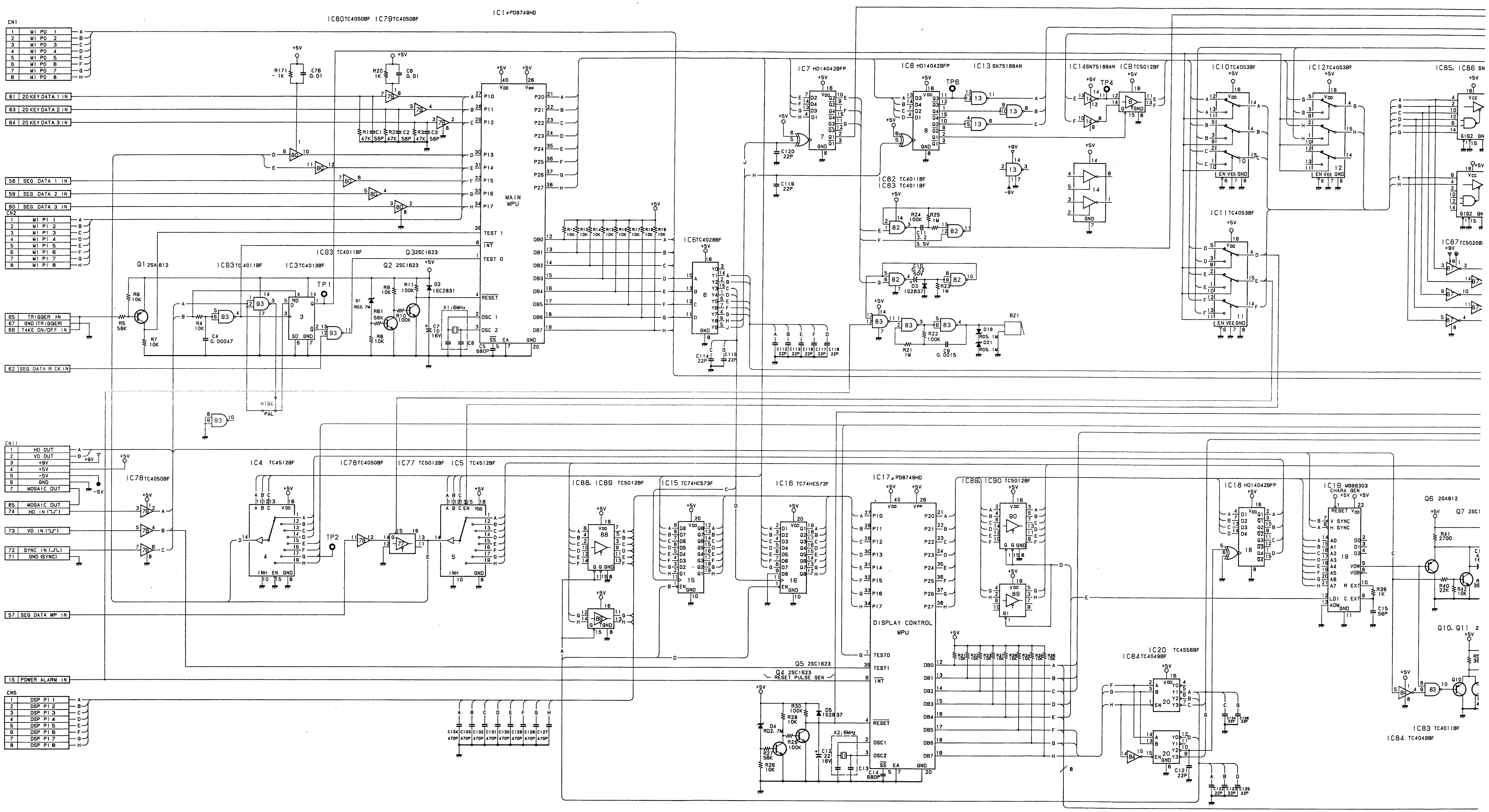
SY-41A BOARD

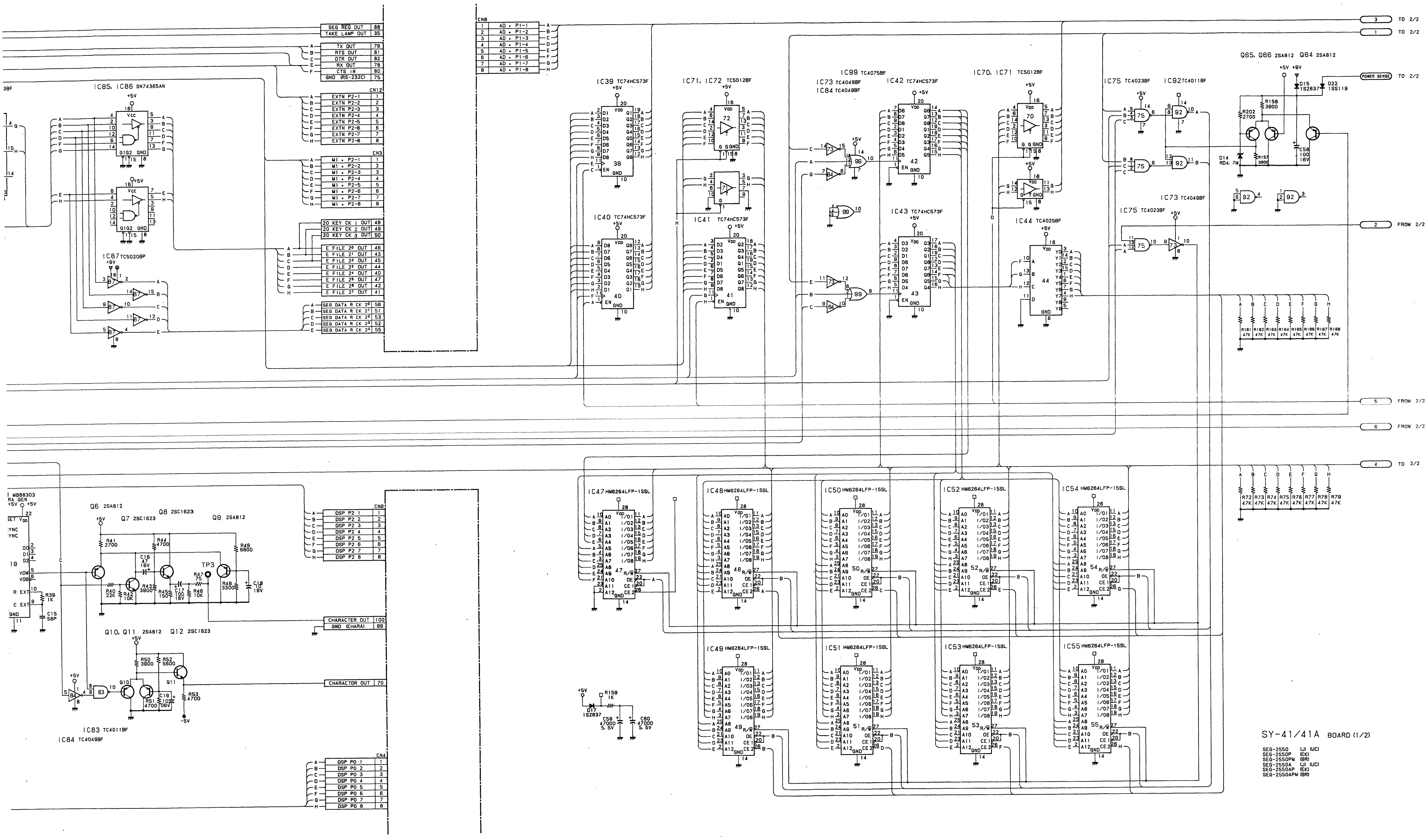
—SOLDERING SIDE—

1-617-832-15

SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

SY-41A (1/2) BOARD


CN1
M1 P0 1
M1 P0 2
M1 P0 3
M1 P0 4
M1 P0 5
M1 P0 6
M1 P0 7
M1 P0 8
61 20 KEY DATA 1 IN
63 20 KEY DATA 2 IN
64 20 KEY DATA 3 IN
58 SEG DATA 1 IN
59 SEG DATA 2 IN
60 SEG DATA 3 IN
CN2
M1 P1 1
M1 P1 2
M1 P1 3
M1 P1 4
M1 P1 5
M1 P1 6
M1 P1 7
M1 P1 8
65 TRIGGER IN
67 GND (TRIGGER)
66 TAKE ON/OFF IN
62 SEG DATA R CK IN
CN11
HD OUT
VD OUT
+9V
+5V
-5V
GND
MOSAIC OUT
85 MOSAIC OUT
74 HD IN
73 VD IN
72 SYNC IN
71 GND (SYNC)
57 SEG DATA WP IN
15 POWER ALARM IN
CN5
DSP P1 1
DSP P1 2
DSP P1 3
DSP P1 4
DSP P1 5
DSP P1 6
DSP P1 7
DSP P1 8
IC1 μPD8749HD
MAIN MPU
IC80 TC4050BF
IC79 TC4050BF
IC93 TC4011BF
IC3 TC4013BF
Q1 2SA812
Q2 2SC1623
Q3 2SC1623
X1 6MHz
TP1
NTSC
PAL
IC6 TC4028BF
IC7 HD14042BFP
IC8 HD14042BFP
IC13 SN75188AN
IC14 SN75189AN
IC9 TC5012BF
TP4
TP6
IC82 TC4011BF
IC83 TC4011BF
BZ1
IC10 TC4053BF
IC11 TC4053BF
IC12 TC4053BF
IC85, IC86
IC87 TC5020BF
IC78 TC4050BF
IC4 TC4512BF
IC78 TC4050BF
IC77 TC5012BF
IC5 TC4512BF
TP2
IC88, IC89 TC5012BF
IC15 TC74HC573F
IC16 TC74HC573F
IC17 μPD8749HD
DISPLAY CONTROL MPU
IC89, IC90 TC5012BF
IC18 HD14042BFP
IC19 MB88303
CHARA GEN
Q6 2SA812
Q7 2SC
Q10, Q11
Q4 2SC1623
RESET PULSE GEN
Q5 2SC1623
X2 6MHz
IC20 TC4556BF
IC84 TC4049BF
IC83 TC4011BF
IC84 TC4049BF

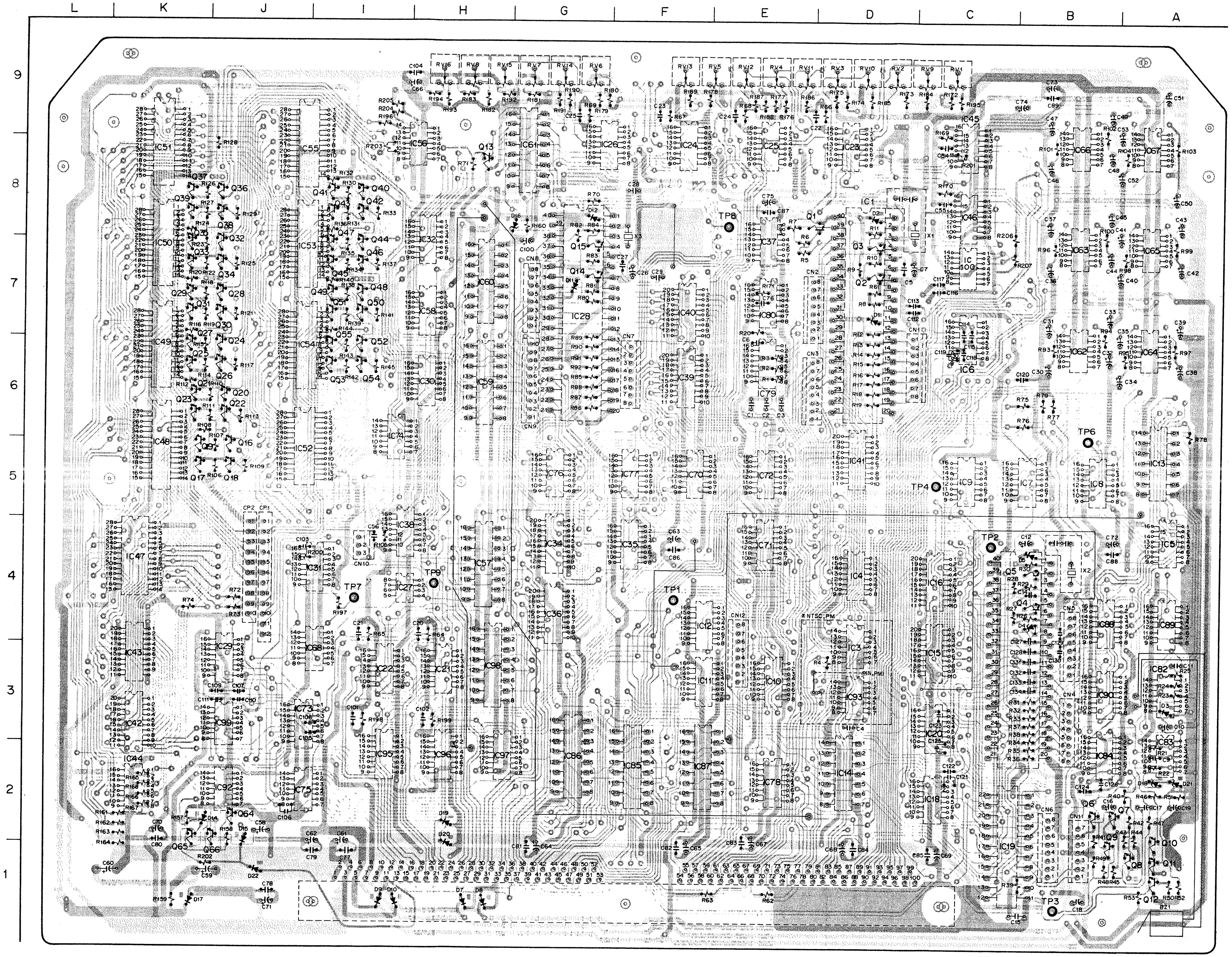

SEG REQ OUT
TAKE LAMP OUT
TX OUT
RTS OUT
DTR OUT
RX OUT
CTS IN
GND (RS-232C)
CN12
EXTN P2-1
EXTN P2-2
EXTN P2-3
EXTN P2-4
EXTN P2-5
EXTN P2-6
EXTN P2-7
EXTN P2-8
CN3
MI • P2-1
MI • P2-2
MI • P2-3
MI • P2-4
MI • P2-5
MI • P2-6
MI • P2-7
MI • P2-8
20 KEY CK 1 OUT
20 KEY CK 2 OUT
20 KEY CK 3 OUT
E FILE 2⁰ OUT
E FILE 2¹ OUT
E FILE 2² OUT
E FILE 2³ OUT
E FILE 2⁴ OUT
E FILE 2⁵ OUT
E FILE 2⁶ OUT
E FILE 2⁷ OUT
SEG DATA R CK 2⁰
SEG DATA R CK 2¹
SEG DATA R CK 2²
SEG DATA R CK 2³
SEG DATA R CK 2⁴
CN8
AD • P1-1
AD • P1-2
AD • P1-3
AD • P1-4
AD • P1-5
AD • P1-6
AD • P1-7
AD • P1-8
IC85, IC86 SN74365AN
IC87 TC5020BP
IC39 TC74HC573F
IC40 TC74HC573F
IC71, IC72 TC5012BF
IC41 TC74HC573F
IC99 TC4075BF
IC73 TC4049BF
IC84 TC4049BF
IC42 TC74HC573F
IC43 TC74HC573F
IC70, IC71 TC5012BF
IC44 TC4028BF
IC75 TC4023BF
IC92 TC4011BF
IC73 TC4049BF
IC75 TC4023BF
Q65, Q66 2SA812 Q84 2SA812
POWER SENSE
TO 2/2
FROM 2/2
R202 2700
R158 3900
R157 3900
D15 1S2837
D22 1SS119
C58 100 16V
D14 RD4.7M
R181 47K
R182 47K
R183 47K
R184 47K
R185 47K
R186 47K
R187 47K
R188 47K
R72 47K
R73 47K
R74 47K
R75 47K
R76 47K
R77 47K
R78 47K
R79 47K
IC47 HM6264LFP-15SL
IC48 HM6264LFP-15SL
IC50 HM6264LFP-15SL
IC52 HM6264LFP-15SL
IC54 HM6264LFP-15SL
IC49 HM6264LFP-15SL
IC51 HM6264LFP-15SL
IC53 HM6264LFP-15SL
IC55 HM6264LFP-15SL
MB88303
Q6 2SA812
Q7 2SC1623
Q8 2SC1623
Q9 2SA812
TP3
R41 2700
R44 4700
R49 6800
R40 22K
R42 10K
R43 3900
R45 150
R47 75
R46 10K
R48 3300
C16 47 16V
C17 10 16V
C18 10 16V
R39 1K
C15 56P
Q10, Q11 2SA812 Q12 2SC1623
R50 3900
R52 5600
R51 4700
C19 10 16V
R53 4700
IC83 TC4011BF
IC84 TC4049BF
CN8
DSP P2 1
DSP P2 2
DSP P2 3
DSP P2 4
DSP P2 5
DSP P2 6
DSP P2 7
DSP P2 8
CHARACTER OUT
GND (CHARA)
CHARACTOR OUT
CN4
DSP P0 1
DSP P0 2
DSP P0 3
DSP P0 4
DSP P0 5
DSP P0 6
DSP P0 7
DSP P0 8
R159 1K
D17 1S2837
C59 47000 5.5V
C60 47000 5.5V

SY-41/41A BOARD (1/2)

SEG-2550 (J) (UC)
SEG-2550P (EK)
SEG-2550PM (BR)
SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

SY-41A BOARD
SOLDERING SIDE

BZ1	A-1
CN1	C-6
CN2	E-7
CN3	E-6
CN4	B-3
CN5	B-4
CN6	B-2
CN7	F-6
CN8	G-7
CN9	G-6
CN10	I-4
CN11	B-1
CN12	E-3
CN13	F-1
CP1	J-4
CP2	J-4
D1	D-7
D2	D-8
D3	A-3
D4	B-3
D5	B-4
D7	H-1
D8	H-1
D9	I-1
D10	I-1
D11	G-7
D12	G-8
D14	K-2
D15	J-2
D16	G-8
D17	K-1
D18	A-2
D19	H-2
D20	H-2
D21	A-2
D22	J-1
IC1	D-7
IC3	D-3
IC4	D-4
IC5	A-5
IC6	C-7
IC7	B-5
IC8	B-5
IC9	C-5
IC10	E-3
IC11	F-3
IC12	F-4
IC13	A-5
IC14	D-2
IC15	C-3
IC16	C-5
IC17	B-3
IC18	C-2
IC19	C-2
IC20	C-3
IC21	H-3
IC22	I-3
IC23	D-8
IC24	F-8
IC25	E-8
IC26	G-8
IC27	I-4
IC28	G-7
IC29	J-3
IC30	H-6
IC31	I-4
IC32	H-8
IC34	G-5
IC35	F-5
IC36	G-4
IC37	E-8
IC38	I-5
IC39	F-6
IC40	F-7
IC41	D-5
IC42	K-3
IC43	K-3
IC44	K-2
IC45	C-8
IC46	C-8
IC47	K-4
IC48	K-5
IC49	K-6
IC50	K-7
IC51	K-8
IC52	J-5
IC53	J-7
IC54	J-6
IC55	J-8
IC56	H-8
IC57	H-4
IC58	H-7
IC59	H-6
IC60	H-7
IC61	G-8
IC62	B-6
IC63	B-7
IC64	A-6
IC65	A-7
IC66	B-8
IC67	A-8
IC68	I-3
IC70	F-5
IC71	E-4
IC72	E-5
IC73	J-3
IC74	I-6
IC75	J-2
IC76	G-5
IC77	F-5
IC78	E-2
IC79	E-6
IC80	E-7
IC82	A-3
IC83	A-2
IC84	B-2
IC85	F-2
IC86	G-2
IC87	F-2
IC88	B-4
IC89	A-4
IC90	B-3
IC92	J-2
IC93	D-3
IC95	I-2
IC96	H-2
IC97	H-2
IC98	H-3
IC99	J-3
Q1	D-8
Q2	D-7
Q3	D-7
Q4	B-4
Q5	B-4
Q6	B-2
Q7	A-2
Q8	A-1
Q9	B-2
Q10	A-2
Q11	A-1
Q12	A-1
Q13	H-8
Q14	G-7
Q15	G-7
Q16	J-5
Q17	K-5
Q18	J-5
Q19	K-5
Q20	J-6
Q21	K-6
Q22	J-6
Q23	K-6
Q24	J-7
Q25	K-6
Q26	J-6
Q27	K-6
Q28	J-7
Q29	K-7
Q30	J-7
Q31	K-7
Q32	J-8
Q33	K-7
Q34	J-7
Q35	K-8
Q36	J-8
Q37	K-8
Q38	J-8
Q39	K-8
Q40	I-8
Q41	I-8
Q42	I-8
Q43	I-8
Q44	I-7
Q45	I-7
Q46	I-7
Q47	I-8
Q48	I-7
Q49	I-7
Q50	I-7
Q51	I-7
Q52	I-6
Q53	I-6
Q54	I-6
Q55	I-6
Q64	J-2
Q65	K-2
Q66	J-2
RV1	C-9
RV2	D-9
RV3	D-9
RV4	E-9
RV5	E-9
RV6	G-9
RV7	G-9
RV8	H-9
RV9	C-9
RV10	D-9
RV11	E-9
RV12	E-9
RV13	F-9
RV14	G-9
RV15	H-9
RV16	H-9
TP1	F-5
TP2	C-5
TP3	A-1
TP4	C-5
TP6	B-6
TP7	I-4
TP8	E-8
TP9	H-4
X1	D-8
X2	B-4
X3	F-8

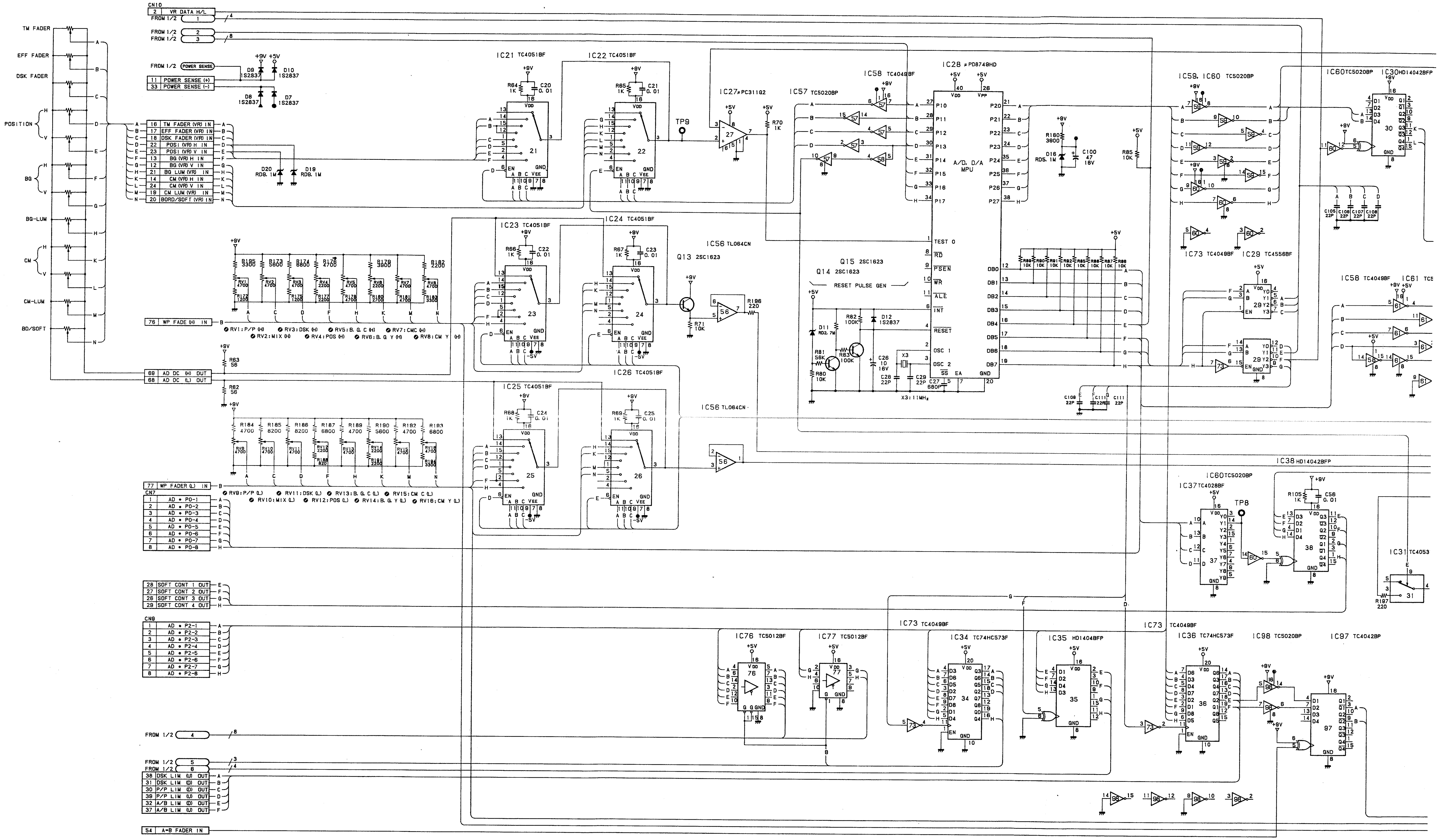


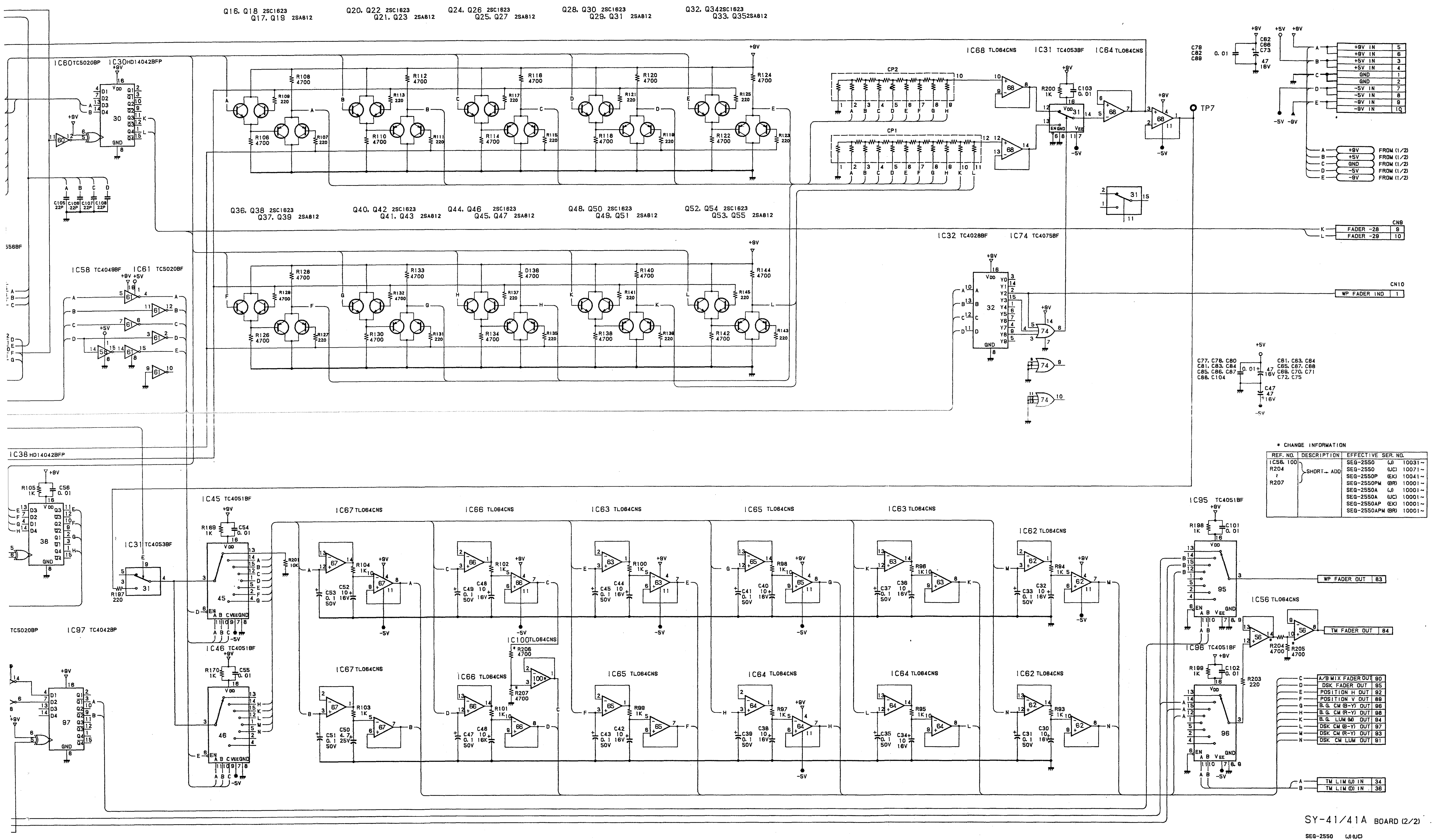
SY-41A BOARD

—SOLDERING SIDE—

1-617-832-15
SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

SY-41A (2/2) BOARD


CN10
2 VR DATA H/L
FROM 1/2 1
FROM 1/2 2
FROM 1/2 3
FROM 1/2 POWER SENSE
11 POWER SENSE (+)
33 POWER SENSE (-)
TM FADER
EFF FADER
DSK FADER
POSITION
BG
BG-LUM
CM
CM-LUM
BD/SOFT
16 TM FADER (VR) IN
17 EFF FADER (VR) IN
18 DSK FADER (VR) IN
22 POSI (VR) H IN
23 POSI (VR) V IN
13 BG (VR) H IN
12 BG (VR) V IN
21 BG LUM (VR) IN
14 CM (VR) H IN
24 CM (VR) V IN
19 CM LUM (VR) IN
20 BORD/SOFT (VR) IN
D9 1S2837
D10 1S2837
D8 1S2837
D7 1S2837
D20 RD6.1M
D19 RD6.1M
IC21 TC4051BF
IC22 TC4051BF
IC23 TC4051BF
IC24 TC4051BF
IC25 TC4051BF
IC26 TC4051BF
IC27 μPC311G2
IC28 μPD8749HD
A/D, D/A MPU
IC56 TL064CN
IC57 TC5020BP
IC58 TC4049BF
IC59, IC60 TC5020BP
IC60 TC5020BP
IC30 HD14042BFP
IC73 TC4049BF
IC29 TC4556BF
IC58 TC4049BF
IC61
IC37 TC4028BF
IC38 HD14042BFP
IC31 TC4053
IC76 TC5012BF
IC77 TC5012BF
IC34 TC74HC573F
IC35 HD14049BFP
IC36 TC74HC573F
IC98 TC5020BP
IC97 TC4042BP
Q13 2SC1623
Q14 2SC1623
Q15 2SC1623
RESET PULSE GEN
X3:11MHz
TP9
TP8
76 WP FADE (H) IN
77 WP FADER (L) IN
69 AD DC (H) OUT
68 AD DC (L) OUT
RV1:P/P (H)
RV2:MIX (H)
RV3:DSK (H)
RV4:POS (H)
RV5:B.G C (H)
RV6:B.G Y (H)
RV7:CMC (H)
RV8:CM Y (H)
RV9:P/P (L)
RV10:MIX (L)
RV11:DSK (L)
RV12:POS (L)
RV13:B.G C (L)
RV14:B.G Y (L)
RV15:CM C (L)
RV16:CM Y (L)
CN7
1 AD • P0-1
2 AD • P0-2
3 AD • P0-3
4 AD • P0-4
5 AD • P0-5
6 AD • P0-6
7 AD • P0-7
8 AD • P0-8
28 SOFT CONT 1 OUT
27 SOFT CONT 2 OUT
26 SOFT CONT 3 OUT
25 SOFT CONT 4 OUT
CN9
1 AD • P2-1
2 AD • P2-2
3 AD • P2-3
4 AD • P2-4
5 AD • P2-5
6 AD • P2-6
7 AD • P2-7
8 AD • P2-8
FROM 1/2 4
FROM 1/2 5
FROM 1/2 6
38 DSK LIM (L) OUT
31 DSK LIM (H) OUT
30 P/P LIM (L) OUT
39 P/P LIM (H) OUT
32 A/B LIM (H) OUT
37 A/B LIM (L) OUT
54 A-B FADER IN


Q16, Q18 2SC1623
Q17, Q19 2SA812
Q20, Q22 2SC1623
Q21, Q23 2SA812
Q24, Q26 2SC1623
Q25, Q27 2SA812
Q28, Q30 2SC1623
Q29, Q31 2SA812
Q32, Q34 2SC1623
Q33, Q35 2SA812
Q36, Q38 2SC1623
Q37, Q39 2SA812
Q40, Q42 2SC1623
Q41, Q43 2SA812
Q44, Q46 2SC1623
Q45, Q47 2SA812
Q48, Q50 2SC1623
Q49, Q51 2SA812
Q52, Q54 2SC1623
Q53, Q55 2SA812
IC60 TC5020BP
IC30 HD14042BFP
IC58 TC4049BF
IC61 TC5020BF
IC38 HD14042BFP
IC31 TC4053BF
IC45 TC4051BF
IC46 TC4051BF
IC97 TC4042BP
IC67 TL064CNS
IC66 TL064CNS
IC63 TL064CNS
IC65 TL064CNS
IC62 TL064CNS
IC64 TL064CNS
IC100 TL064CNS
IC68 TL064CNS
IC32 TC4028BF
IC74 TC4075BF
IC95 TC4051BF
IC96 TC4051BF
IC56 TL064CNS
CP1
CP2
TP7
+9V
+5V
-5V
-9V
C79
C82
C89
0.01
C62
C66
C73
47
16V
+9V IN 5
+9V IN 6
+5V IN 3
+5V IN 4
GND 1
GND 2
-5V IN 7
-5V IN 8
-9V IN 9
-9V IN 10
+9V FROM (1/2)
+5V FROM (1/2)
GND FROM (1/2)
-5V FROM (1/2)
-9V FROM (1/2)
CN9
FADER -28 9
FADER -29 10
CN10
WP FADER IND 1
C77, C78, C80
C81, C83, C84
C85, C86, C87
C88, C104
C61, C63, C64
C65, C67, C68
C69, C70, C71
C72, C75
C47 47 16V
WP FADER OUT 83
TM FADER OUT 84
R204 4700
R205 4700
R203 220
R198 1K
C101 0.01
R199 1K
C102 0.01
A/B MIX FADER OUT 90
DSK FADER OUT 95
POSITION H OUT 92
POSITION V OUT 89
B.G. CM (B-Y) OUT 96
B.G. CM (R-Y) OUT 98
B.G. LUM (M) OUT 94
DSK CM (B-Y) OUT 97
DSK CM (R-Y) OUT 93
DSK CM LUM OUT 91
TM LIM (U) IN 34
TM LIM (D) IN 36

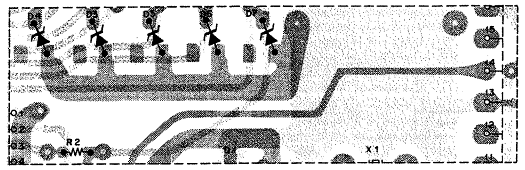
* CHANGE INFORMATION

REF. NO.	DESCRIPTION	EFFECTIVE SER. NO.
IC56, 100 R204 ~ R207	SHORT → ADD	SEG-2550 (J) 10031~ SEG-2550 (UC) 10071~ SEG-2550P (EK) 10041~ SEG-2550PM (BR) 10001~ SEG-2550A (J) 10001~ SEG-2550A (UC) 10001~ SEG-2550AP (EK) 10001~ SEG-2550APM (BR) 10001~

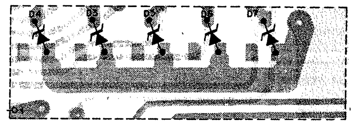
SY-41/41A BOARD (2/2)

SEG-2550 (J) (UC)
SEG-2550P (EK)
SEG-2550PM (BR)
SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

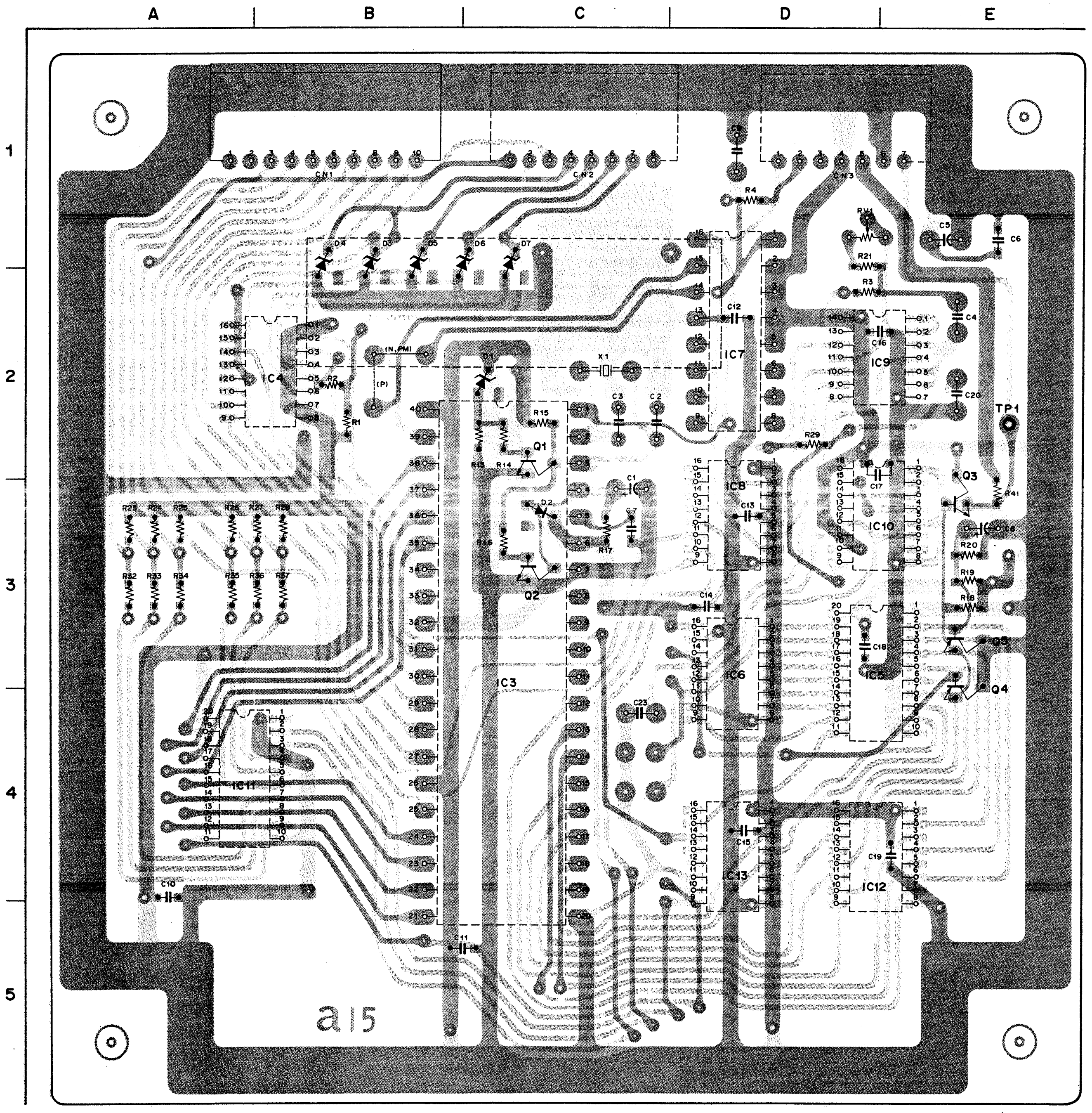
SY-52 BOARD
SOLDERING SIDE


D4
D3
D5
D6
R2
X1
15
14
13
12

1-617-825-13
Ser NO. 10051~10060(J)
Ser NO. 10206~10265(UC)
Ser NO. 10296~10335(EK)


D4
D3
D5
D6
D7
D1

1-617-825-14
Ser NO. 10061 ~ 10120 (J)
Ser NO. 10266 ~ 10315 (UC)
Ser NO. 10406 ~ 10535 (EK)
Ser NO. 10006 ~ 10015 (BRZ)

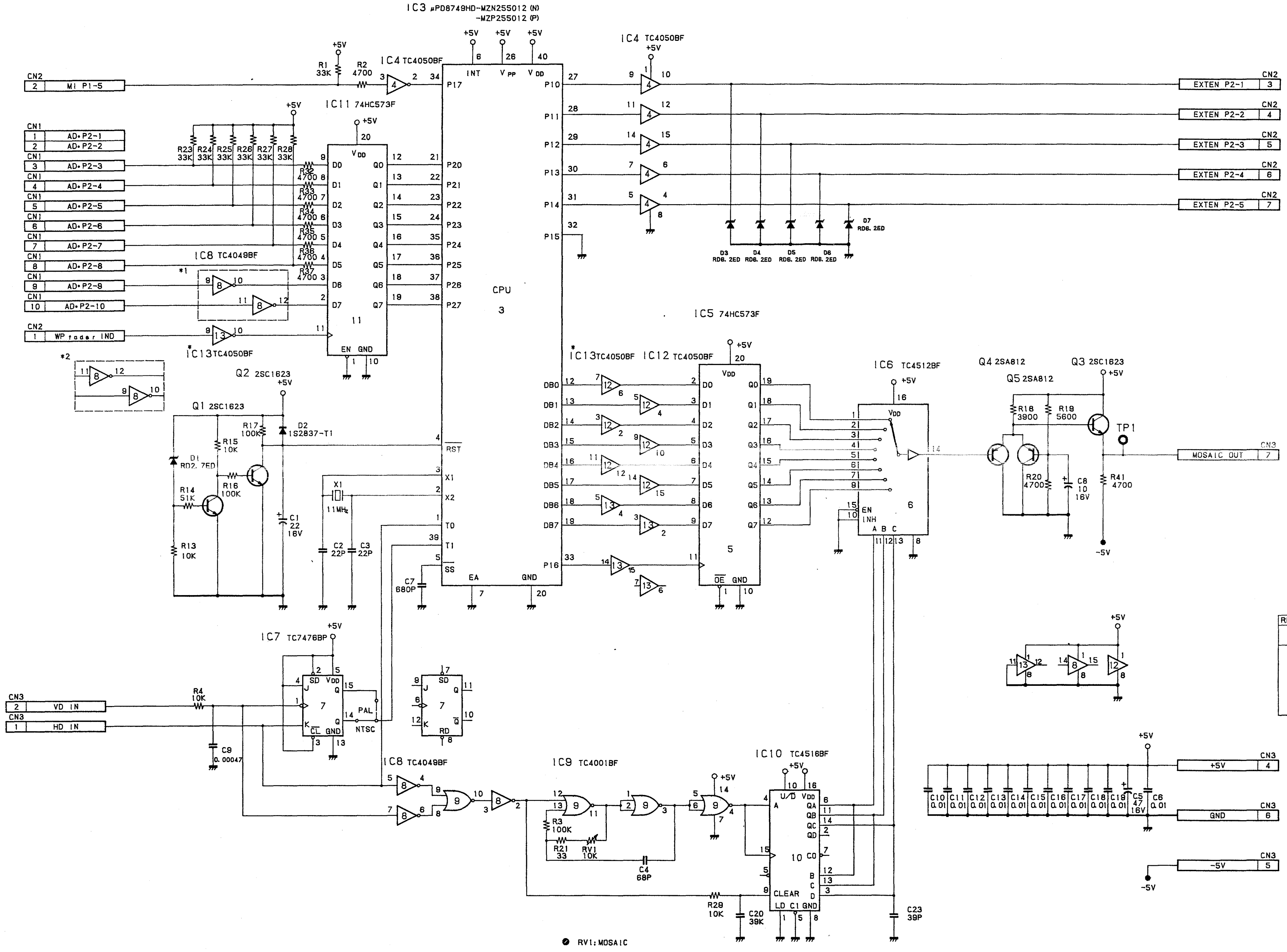

A
B
C
D
E
1
2
3
4
5
CN1
CN2
CN3
D4
D3
D5
D6
D7
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
Q1
Q2
Q3
Q4
Q5
X1
TP1
RV1
R1
R2
R3
R4
R13
R14
R15
R16
R17
R18
R19
R20
R21
R29
R41
C1
C2
C3
C4
C5
C6
C8
C9
C10
C11
C12
C13
C14
C15
C16
C17
C18
C19
C20
C23
(N,PM)
(P)
a15

CN1	B-1
CN2	C-1
CN3	D-1
D1	C-2
D2	C-3
D3	B-2
D4	B-2
D5	B-2
D6	C-2
D7	C-2
IC3	C-3
IC4	B-2
IC5	E-3
IC6	D-3
IC7	D-2
IC8	D-3
IC9	E-2
IC10	E-3
IC11	A-4
IC12	E-4
IC13	D-4
Q1	C-2
Q2	C-3
Q3	E-3
Q4	E-4
Q5	E-3
RV1	D-1
TP1	E-2
X1	C-2

SY-52 BOARD
— SOLDERING SIDE —
1-617-825-13,14,15

SEG-2550	(J)	10051~10120
SEG-2550	(UC)	10206~10315
SEG-2550P	(EK)	10296~10535
SEG-2550PM	(BR)	10006~10015
SEG-2550A	(J)	
SEG-2550A	(UC)	
SEG-2550AP	(EK)	
SEG-2550APM	(BR)	

SY-52 BOARD


IC3 μPD8749HD-MZN255012 (N) -MZP255012 (P)
CPU 3
IC4 TC4050BF
IC11 74HC573F
IC5 74HC573F
IC6 TC4512BF
IC7 TC7476BP
IC8 TC4049BF
IC9 TC4001BF
IC10 TC4516BF
IC12 TC4050BF
IC13 TC4050BF
Q1 2SC1623
Q2 2SC1623
Q3 2SC1623
Q4 2SA812
Q5 2SA812
D1 RD2.7ED
D2 1S2837-T1
D3 RD6.2ED
D4 RD6.2ED
D5 RD6.2ED
D6 RD6.2ED
D7 RD6.2ED
X1 11MHz
TP1
PAL
NTSC
CN2 MI P1-5
CN1 AD-P2-1
AD-P2-2
AD-P2-3
AD-P2-4
AD-P2-5
AD-P2-6
AD-P2-7
AD-P2-8
AD-P2-9
AD-P2-10
CN2 WP fader IND
CN2 EXTEN P2-1
EXTEN P2-2
EXTEN P2-3
EXTEN P2-4
EXTEN P2-5
CN3 MOSAIC OUT
CN3 VD IN
CN3 HD IN
CN3 +5V
GND
-5V
*1
*2
RV1: MOSAIC

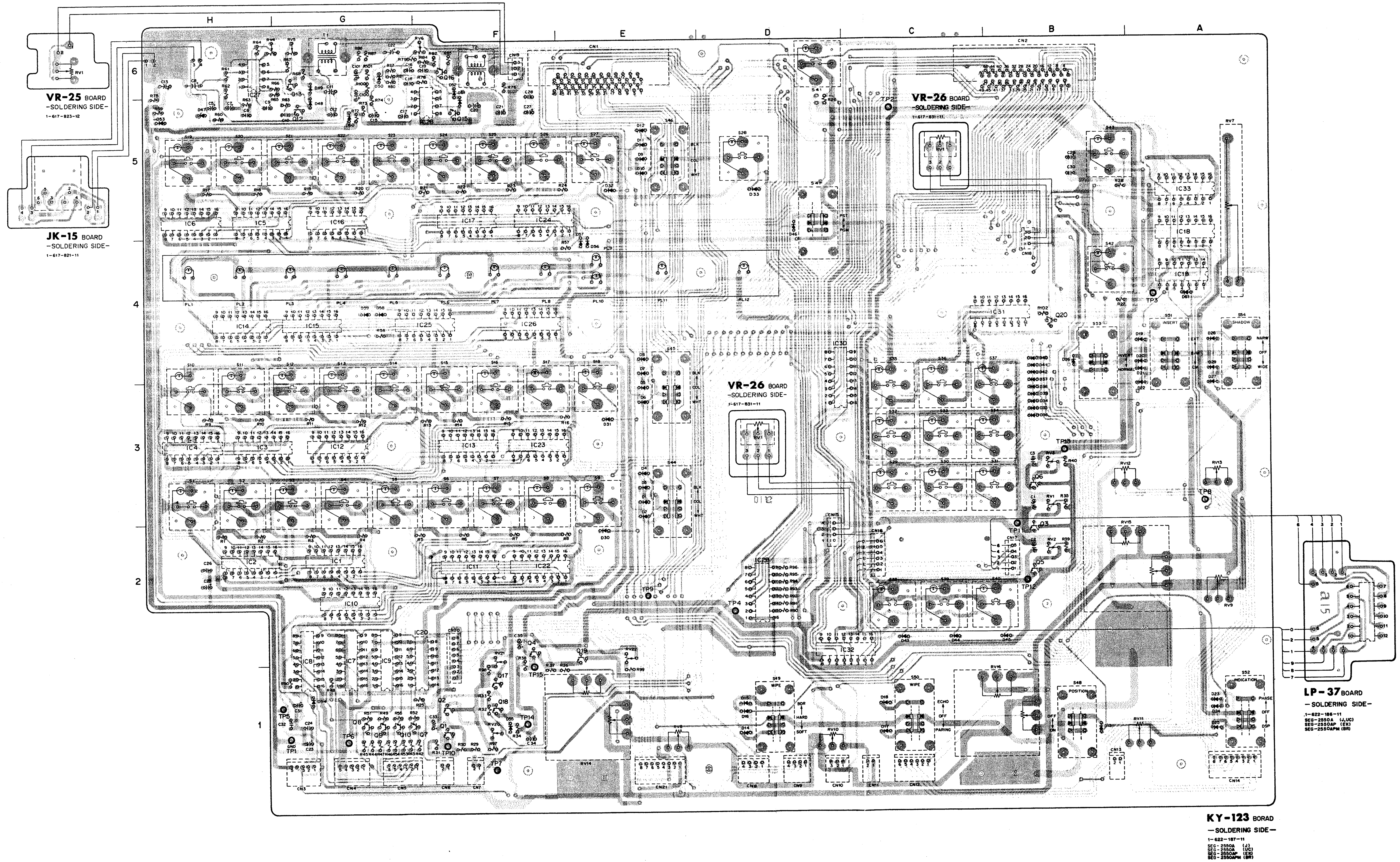
* CHANGE INFORMATION

REF. NO.	DESCRIPTION	EFFECTIVE SER. NO.
	*2 → *1	SEG-2550 (J) 10021 ~
IC1	IC13 → IC1	SEG-2550 (UC) 10041 ~ SEG-2550P (EK) 10041 ~ SEG-2550PM (BRZ) 10001 ~ SEG-2550A (J) 10001 ~ SEG-2550A (UC) 10001 ~ SEG-2550AP (EK) 10001 ~ SEG-2550APM (BR) 10001 ~

SY-52 BOARD

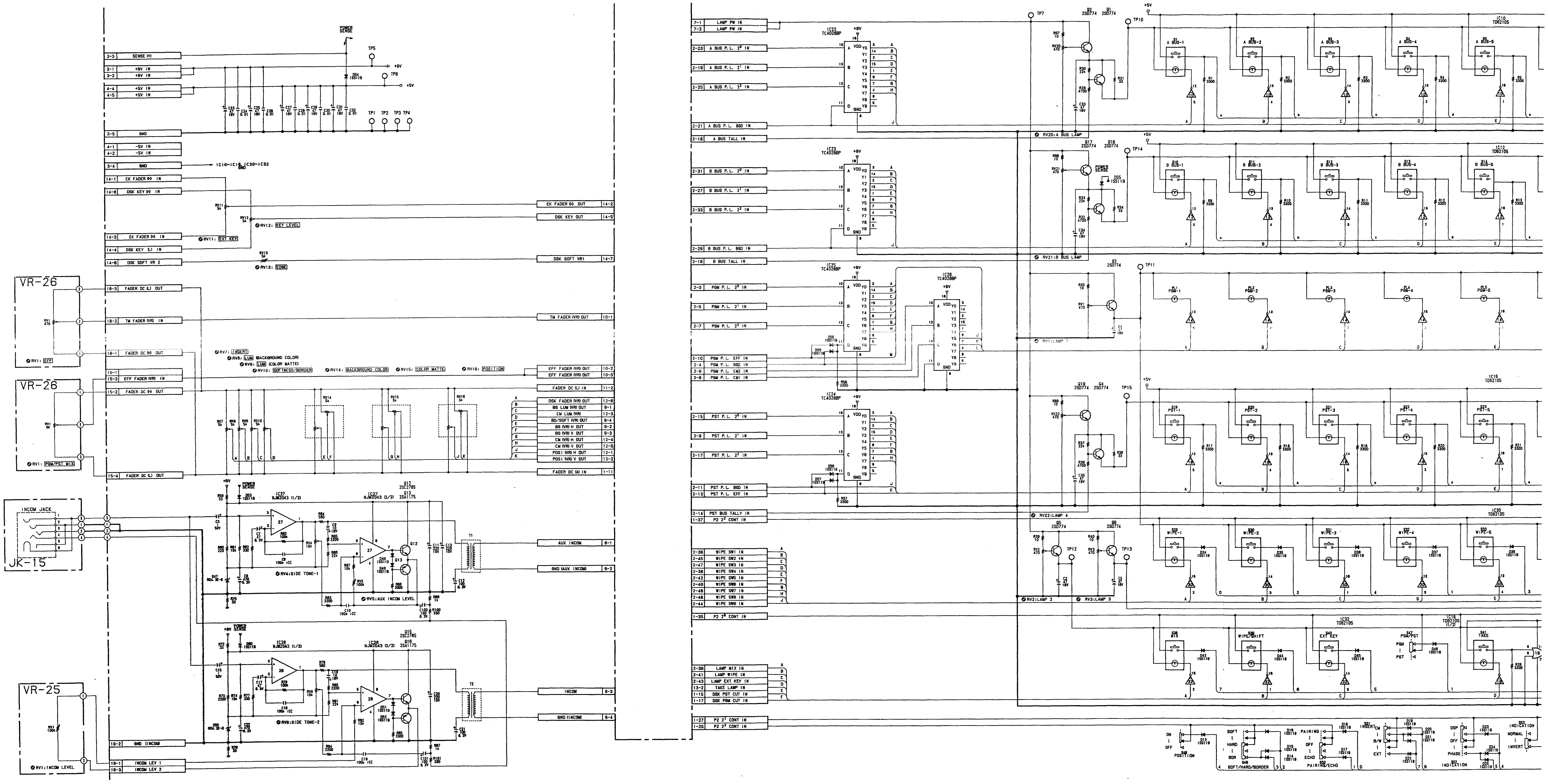
SEG-2550	(J) (UC)
SEG-2550P	(EK)
SEG-2550PM	(BRZ)
SEG-2550A	(J) (UC)
SEG-2550AP	(EK)
SEG-2550APM	(BR)

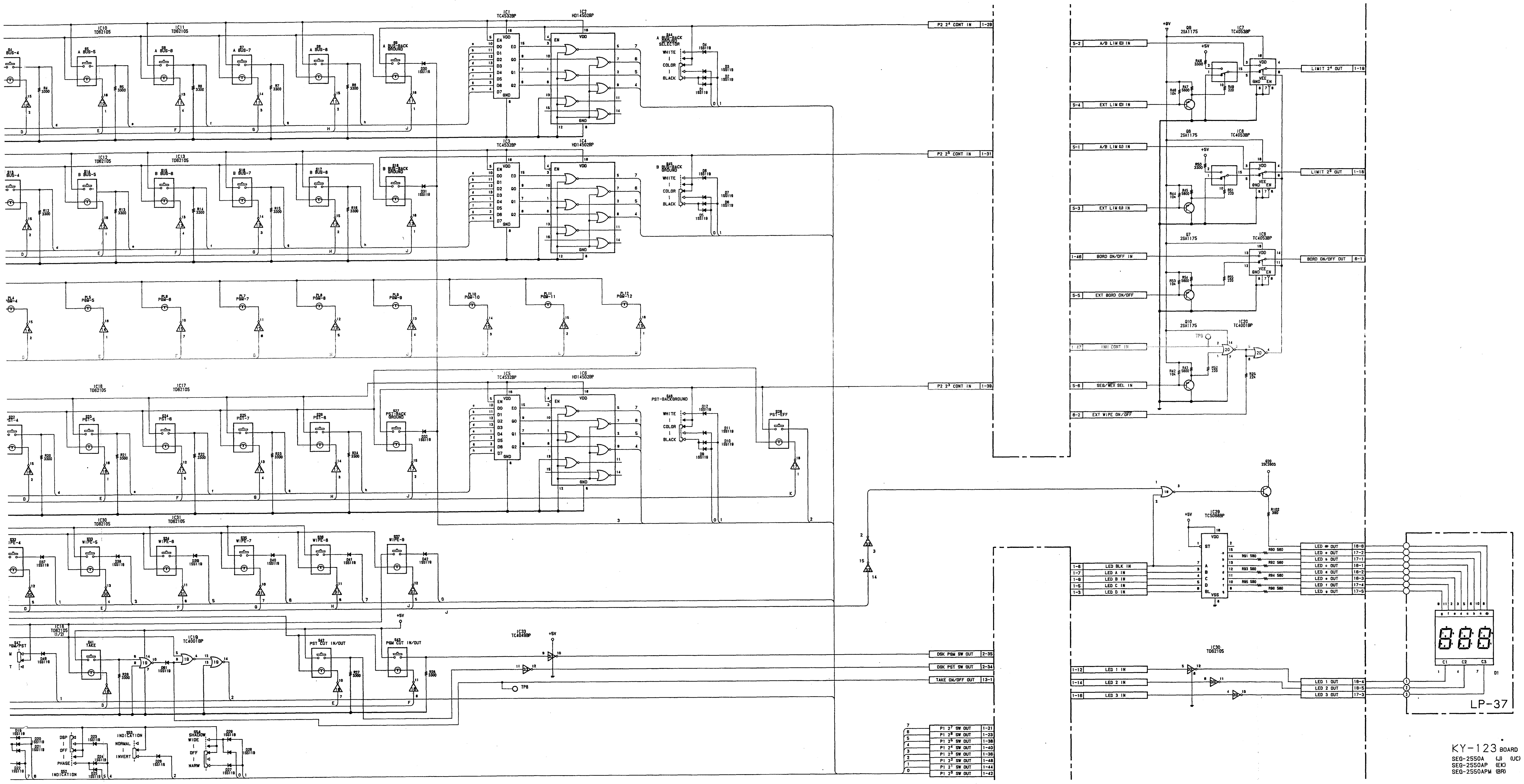
JK-15 BOARD
KY-123 BOARD
LP-37 BOARD
VR-25 BOARD
VR-26 BOARD
SOLDERING SIDE


H
G
F
E
D
C
B
A
6
5
4
3
2
1
VR-25 BOARD
-SOLDERING SIDE-
1-617-823-12
RV1
JK-15 BOARD
-SOLDERING SIDE-
1-617-821-11
VR-26 BOARD
-SOLDERING SIDE-
1-617-831-11
LP-37 BOARD
-SOLDERING SIDE-
1-622-186-11
SEG-2550A (J,UC)
SEG-2550AP (EK)
SEG-2550APM (BR)
KY-123 BORAD
-SOLDERING SIDE-
1-622-187-11
SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)
CN14
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP12
TP13
TP14
TP15
INSERT
SHADOW
WIPE
POSITION
INDICATION
PHASE
OFF
DSP
HARD
SOFT
ECHO
PAIRING
NARW
WIDE

CN1	E-6
CN2	B-6
CN3	G-1
CN4	G-1
CN5	G-1
CN6	F-1
CN7	F-1
CN8	D-1
CN9	D-1
CN10	D-1
CN11	C-1
CN12	C-1
CN13	B-1
CN14	A-1
CN15	D-2
CN16	C-2
CN17	B-2
CN18	B-4
CN19	E-6
CN20	F-2
CN21	E-1
D1	E-3
D2	E-3
D3	E-3
D4	E-3
D5	E-3
D6	E-3
D7	E-4
D8	E-4
D9	E-5
D10	E-5
D11	E-5
D12	E-5
D13	B-1
D14	D-1
D15	D-1
D16	D-1
D17	C-1
D18	C-1
D19	A-4
D20	A-4
D21	A-4
D22	A-3
D23	A-1
D24	A-1
D25	A-1
D26	B-4
D27	A-3
D28	A-4
D29	A-4
D30	E-2
D31	E-3
D32	E-5
D33	D-5
D34	B-3
D35	B-3
D36	B-3
D37	B-3
D38	B-3
D39	B-3
D40	B-4
D41	B-4
D42	B-4
D43	C-2
D44	C-2
D45	B-2
D46	D-5
D47	H-5
D48	G-5
D49	G-6
D50	G-6
D51	F-5
D52	F-6
D53	H-5
D54	G-1
D55	F-1
D56	E-4
D57	E-4
D58	G-4
D59	G-4
D60	G-5
D61	A-4
IC1	G-2
IC2	H-2
IC3	H-3
IC4	H-3
IC5	H-5
IC6	H-5
IC7	G-2
IC8	G-2
IC9	G-2
IC10	G-2
IC11	F-2
IC12	G-3
IC13	F-3
IC14	H-4
IC15	G-4
IC16	G-5
IC17	F-5
IC18	A-4
IC19	A-4
IC20	F-2
IC22	F-2
IC23	F-3
IC24	F-5
IC25	F-4
IC26	F-4
IC27	H-6
IC28	F-6
IC29	D-2
IC30	D-4
IC31	B-4
IC32	C-2
IC33	A-5
PL1	H-4
PL2	H-4
PL3	G-4
PL4	G-4
PL5	G-4
PL6	F-4
PL7	F-4
PL8	F-4
PL9	E-4
PL10	E-4
PL11	E-4
PL12	D-4
Q1	F-1
Q2	F-1
Q3	B-2
Q4	F-2
Q5	B-2
Q6	B-3
Q7	G-1
Q8	G-1
Q9	G-1
Q10	G-1
Q12	G-5
Q13	G-6
Q15	F-5
Q16	F-6
Q17	F-1
Q18	F-1
Q19	E-2
Q20	B-4
RV1	B-3
RV2	B-2
RV3	B-3
RV4	G-6
RV5	G-6
RV6	F-6
RV7	A-5
RV8	E-1
RV9	A-2
RV10	D-1
RV11	A-1
RV12	B-3
RV13	A-3
RV14	E-1
RV15	B-2
RV16	B-1
RV20	F-1
RV21	F-2
RV22	E-2
S1	H-3
S2	H-3
S3	G-3
S4	G-3
S5	G-3
S6	F-3
S7	F-3
S8	F-3
S9	E-3
S10	H-3
S11	H-3
S12	G-3
S13	G-3
S14	G-3
S15	F-3
S16	F-3
S17	F-3
S18	E-3
S19	H-5
S20	H-5
S21	G-5
S22	G-5
S23	G-5
S24	F-5
S25	F-5
S26	F-5
S27	E-5
S28	D-5
S29	C-3
S30	C-3
S31	B-3
S32	C-3
S33	C-3
S34	B-3
S35	C-3
S36	C-3
S37	B-3
S38	C-2
S39	C-2
S40	B-2
S41	D-6
S42	B-4
S43	B-5
S44	E-3
S45	E-3
S46	E-5
S47	D-5
S48	B-1
S49	D-1
S50	C-1
S51	A-4
S52	A-1
S53	B-4
S54	A-4
T1	G-6
T2	F-6
TP1	G-1
TP2	C-5
TP3	A-4
TP4	D-2
TP5	G-1
TP6	G-1
TP7	F-1
TP8	A-3
TP9	E-2
TP10	F-1
TP11	B-2
TP12	B-2
TP13	B-3
TP14	F-1

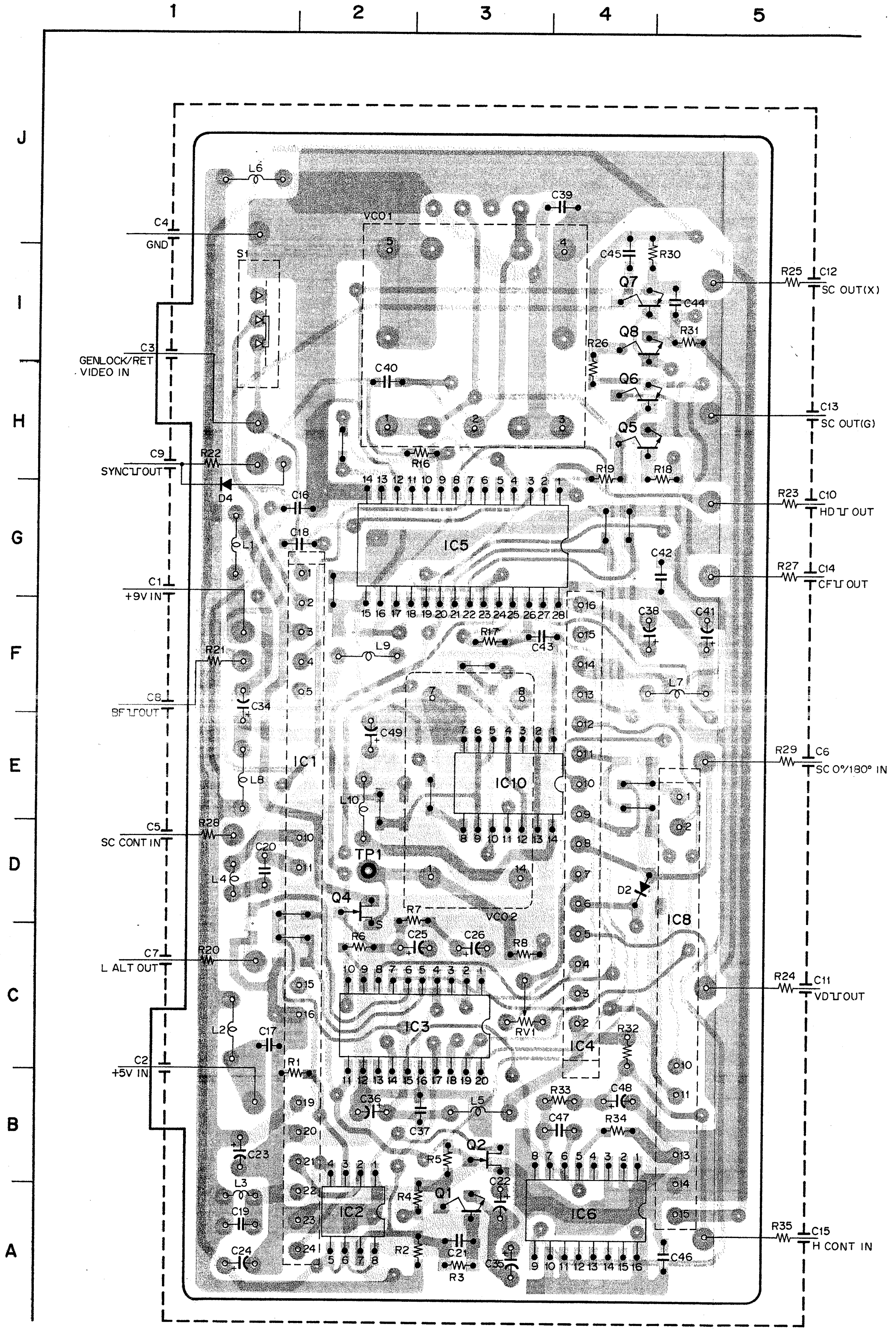
JK-15 BOARD
KY-123 BOARD
LP-37 BOARD
VR-25 BOARD
VR-26 BOARD


VR-26
VR-26
VR-25
JK-15
INCOM JACK
POWER SENSE
SENSE (+)
+9V IN
+5V IN
GND
-5V IN
EK FADER (X) IN
DSK KEY (X) IN
EK FADER (X) OUT
DSK KEY OUT
RV12: KEY LEVEL
RV11: EXT KEY
RV13: EDGE
DSK SOFT VR1
FADER DC (L) OUT
TM FADER (VR) IN
TM FADER (VR) OUT
FADER DC (U) OUT
EFF FADER (VR) IN
RV1: EFF
RV1: PGM/PST MIX
RV7: INSERT
RV8: LUM BACKGROUND COLOR
RV9: LUM COLOR MATTE
RV10: SOFTNESS/BORDER
RV14: BACKGROUND COLOR
RV15: COLOR MATTE
RV16: POSITION
EFF FADER (VR) OUT
FADER DC (L) IN
DSK FADER (VR) OUT
BG LUM (VR) OUT
CM LUM (VR)
FADER DC (U) IN
IC27 NJM2043 (1/2)
IC27 NJM2043 (2/2)
IC28 NJM2043 (1/2)
IC28 NJM2043 (2/2)
RV4: SIDE TONE-1
RV5: AUX INCOM LEVEL
RV6: SIDE TONE-2
AUX INCOM
GND (AUX INCOM)
INCOM
GND (INCOM)
INCOM LEV 1
INCOM LEV 2
RV1: INCOM LEVEL
T1
T2
LAMP PW IN
A BUS P.L. 2⁰ IN
A BUS P.L. 2¹ IN
A BUS P.L. 2² IN
A BUS P.L. BGD IN
A BUS TALL IN
B BUS P.L. 2⁰ IN
B BUS P.L. 2¹ IN
B BUS P.L. 2² IN
B BUS P.L. BGD IN
B BUS TALL IN
PGM P.L. 2⁰ IN
PGM P.L. 2¹ IN
PGM P.L. 2² IN
PGM P.L. EFF IN
PST P.L. 2⁰ IN
PST P.L. 2¹ IN
PST P.L. 2² IN
PST P.L. BGD IN
PST P.L. EFF IN
PST BUS TALLY IN
P2 2⁰ CONT IN
WIPE SW1 IN
WIPE SW2 IN
WIPE SW3 IN
WIPE SW4 IN
WIPE SW5 IN
WIPE SW6 IN
WIPE SW7 IN
WIPE SW8 IN
WIPE SW9 IN
P2 2² CONT IN
LAMP MIX IN
LAMP WIPE IN
LAMP EXT KEY IN
TAKE LAMP IN
DSK PST CUT IN
DSK PGM CUT IN
P2 2¹ CONT IN
P2 2³ CONT IN
IC22 TC4028BP
IC23 TC4028BP
IC25 TC4028BP
IC26 TC4028BP
IC24 TC4028BP
IC10 TD62105
IC12 TD62105
IC16 TD62105
IC30 TD62105
IC32 TD62105
2SD774
TP7
TP10
TP14
TP11
TP15
TP12
TP13
A BUS-1
A BUS-2
A BUS-3
A BUS-4
A BUS-5
B BUS-1
B BUS-2
B BUS-3
B BUS-4
B BUS-5
PGM-1
PGM-2
PGM-3
PGM-4
PGM-5
PST-1
PST-2
PST-3
PST-4
PST-5
WIPE-1
WIPE-2
WIPE-3
WIPE-4
WIPE-5
MIX
WIPE/SHIFT
EXT KEY
PGM/PST
TAKE
RV20: A BUS LAMP
RV21: B BUS LAMP
RV22: LAMP 4
RV2: LAMP 2
RV3: LAMP 3
ON
OFF
POSITION
SOFT
HARD
BDR
SOFT/HARD/BORDER
PAIRING
ECHO
PAIRING/ECHO
INSERT
B/W
EXT
DSP
PHASE
INDICATION
NORMAL
INVERT


IC1 TC4532BP
IC2 HD14502BP
IC3 TC4532BP
IC4 HD14502BP
IC5 TC4532BP
IC6 HD14502BP
IC7 TC4053BP
IC8 TC4053BP
IC9 TC4053BP
IC20 TC4001BP
IC29 TC5068BP
IC30 TD62105
IC33 TC4049BP
P2 2⁴ CONT IN
P2 2⁵ CONT IN
P2 2³ CONT IN
A/B LIM(C) IN
EXT LIM(C) IN
A/B LIM(B) IN
EXT LIM(B) IN
BORD ON/OFF IN
EXT BORD ON/OFF
INH CONT IN
SEG/WEX SEL IN
EXT WIPE ON/OFF
LIMIT 2⁴ OUT
LIMIT 2⁵ OUT
BORD ON/OFF OUT
LED BLK IN
LED A IN
LED B IN
LED C IN
LED D IN
LED 1 IN
LED 2 IN
LED 3 IN
LED 1 OUT
LED 2 OUT
LED 3 OUT
DSK PGM SW OUT
DSK PST SW OUT
TAKE ON/OFF OUT
WHITE
COLOR
BLACK
A BUS-BACK GROUND SELECTOR
B BUS-BACK GROUND
PST-BACKGROUND
PST-OFF
TAKE
PST CUT IN/OUT
PGM CUT IN/OUT
SHADOW
WIDE
OFF
NARW
INDICATION
NORMAL
INVERT
DBP
PHASE
LP-37

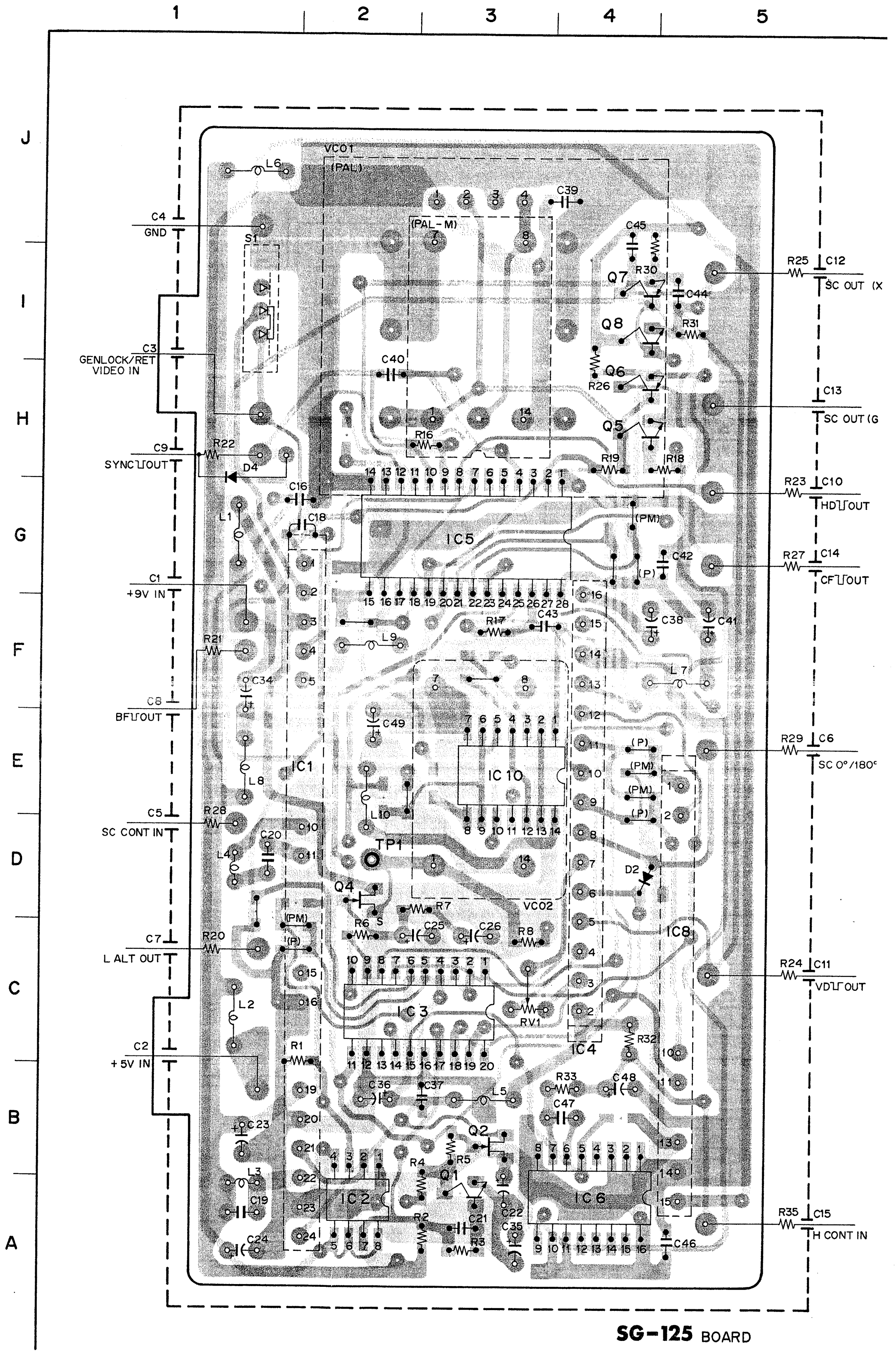
KY-123 BOARD
SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

SG-125 BOARD
SOLDERING SIDE

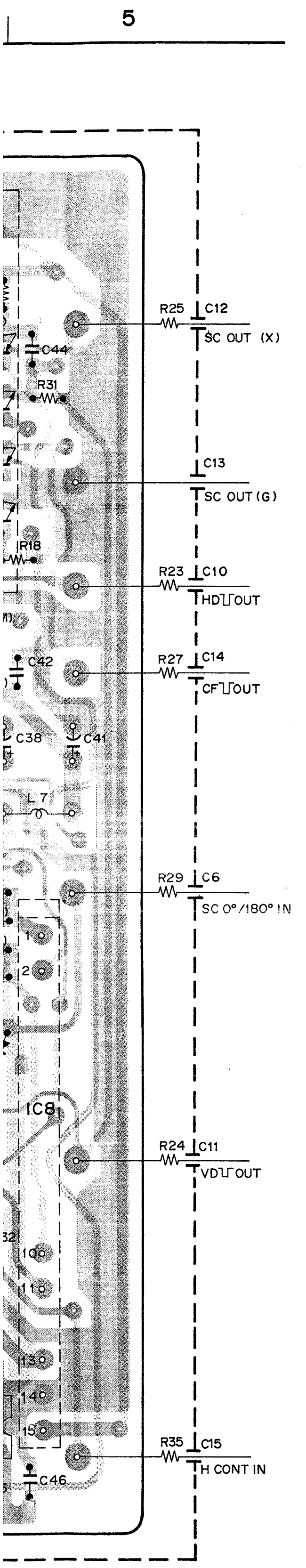

1
2
3
4
5
J
I
H
G
F
E
D
C
B
A
C4
GND
S1
C3
GENLOCK/RET VIDEO IN
C9
R22
SYNC OUT
D4
C1
+9V IN
R21
C8
BF OUT
C34
IC1
C5
R28
SC CONT IN
C7
R20
L ALT OUT
C2
+5V IN
L6
VCO1
C39
C40
IC5
IC10
VCO2
TP1
Q4
IC3
RV1
IC4
IC2
IC6
IC8
Q1
Q2
Q5
Q6
Q7
Q8
D2
R25
C12
SC OUT(X)
C13
SC OUT(G)
R23
C10
HD OUT
R27
C14
CF OUT
R29
C6
SC 0°/180° IN
R24
C11
VD OUT
R35
C15
H CONT IN

D2	D-4
D4	H-1
IC1	D-2
IC2	A-2
IC3	C-3
IC4	D-4
IC5	G-3
IC6	A-4
IC8	C-5
IC10	E-3
Q1	A-3
Q2	B-3
Q4	D-2
Q5	H-4
Q6	H-4
Q7	I-4
Q8	I-4
RV1	C-3
S1	I-1
TP1	D-2
VCO1	H-3
VCO2	E-3

SG-125 BOARD
— SOLDERING SIDE —
1-621-269-11
SEG-2550A (J)
SEG-2550A (UC)


1
2
3
4
5
J
I
H
G
F
E
D
C
B
A
C4
GND
S1
C3
GENLOCK/RET VIDEO IN
C9
R22
SYNC OUT
D4
C1
+9V IN
R21
C8
BF OUT
C34
IC1
C5
R28
SC CONT IN
C7
R20
L ALT OUT
C2
+5V IN
VCO1 (PAL)
(PAL-M)
C39
C40
IC5
IC10
VCO2
TP1
Q4
IC3
RV1
IC4
IC2
IC6
IC8
(PM)
(P)
R25
C12
SC OUT (X
C13
SC OUT (G
R23
C10
HD OUT
R27
C14
CF OUT
R29
C6
SC 0°/180°
R24
C11
VD OUT
R35
C15
H CONT IN

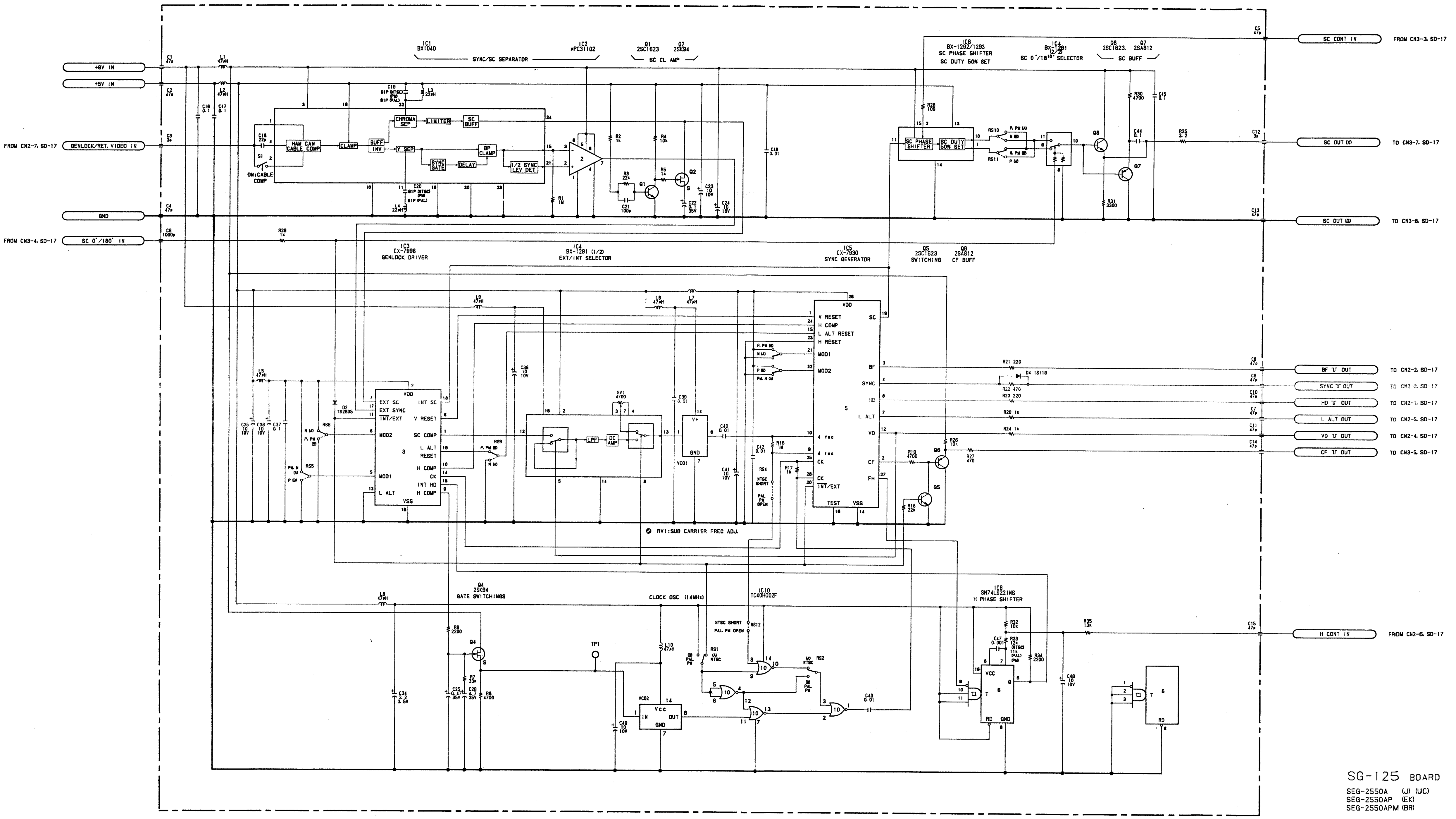
SG-125 BOARD
— SOLDERING SIDE —
1-621-269-11
SEG-2550AP (EK)
SEG-2550APM (BR)


5
R25
C12
SC OUT (X)
C44
R31
C13
SC OUT (G)
R18
R23
C10
HD⊔OUT
R27
C14
CF⊔OUT
C42
C38
C41
L7
R29
C6
SC 0°/180° IN
1
2
IC8
R24
C11
VD⊔OUT
10
11
13
14
15
R35
C15
H CONT IN
C46

-125 BOARD
OLDERING SIDE—
1-269-11
-2550AP (EK)
-2550 APM(BR)

D2	D-4
D4	H-1
IC1	D-2
IC2	A-2
IC3	C-3
IC4	D-4
IC5	G-3
IC6	A-4
IC8	C-5
IC10	E-3
Q1	A-3
Q2	B-3
Q4	D-2
Q5	H-4
Q6	H-4
Q7	I-4
Q8	I-4
RV1	C-3
S1	I-1
TP1	D-2
VCO1	H-3
VCO2	E-3

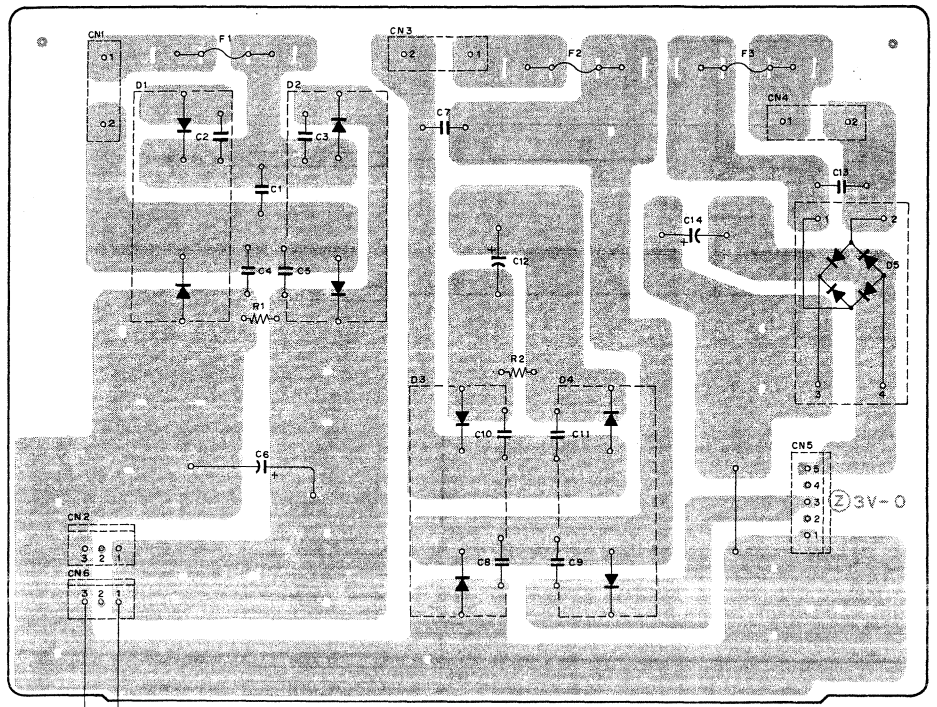
SG-125 BOARD

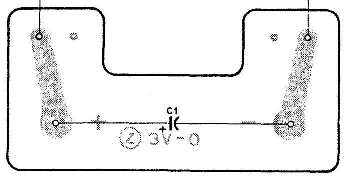

+9V IN
+5V IN
FROM CN2-7, SD-17
GENLOCK/RET. VIDEO IN
GND
FROM CN3-4, SD-17
SC 0°/180° IN
IC1 BX1040
IC2 µPC311G2
SYNC/SC SEPARATOR
Q1 2SC1623
Q2 2SK94
SC CL AMP
HAM CAN CABLE COMP
CLAMP
BUFF INV
CHROMA SEP
LIMITER
SC BUFF
Y SEP
SYNC GATE
DELAY
BP CLAMP
1/2 SYNC LEV DET
ON:CABLE COMP
IC8 BX-1292/1293
SC PHASE SHIFTER
SC DUTY 50% SET
IC4 BX-1291 (2/2)
SC 0°/180° SELECTOR
Q8 2SC1623
Q7 2SA812
SC BUFF
SC PHASE SHIFTER
SC DUTY 50% SET
SC CONT IN
FROM CN3-3, SD-17
SC OUT (X)
TO CN3-7, SD-17
SC OUT (G)
TO CN3-8, SD-17
IC3 CX-7898
GENLOCK DRIVER
IC4 BX-1291 (1/2)
EXT/INT SELECTOR
IC5 CX-7930
SYNC GENERATOR
Q5 2SC1623
SWITCHING
Q6 2SA812
CF BUFF
VDD
EXT SC
EXT SYNC
INT/EXT
MOD2
MOD1
L ALT
VSS
INT SC
V RESET
SC COMP
L ALT RESET
H COMP
CK
INT HD
V RESET
H COMP
L ALT RESET
H RESET
MOD1
MOD2
4 fsc
CK
CK
INT/EXT
TEST
SC
BF
SYNC
HD
L ALT
VD
CF
FH
LPF
DC AMP
RV1 4700
BF ⊓ OUT
TO CN2-2, SD-17
SYNC ⊓ OUT
TO CN2-3, SD-17
HD ⊓ OUT
TO CN2-1, SD-17
L ALT OUT
TO CN2-5, SD-17
VD ⊓ OUT
TO CN2-4, SD-17
CF ⊓ OUT
TO CN3-5, SD-17
RV1:SUB CARRIER FREQ ADJ.
Q4 2SK94
GATE SWITCHINGS
CLOCK OSC (14MHz)
IC10 TC40H002F
NTSC SHORT
PAL, PM OPEN
RS12
RS1
RS2
TP1
VCO2
IC6 SN74LS221NS
H PHASE SHIFTER
H CONT IN
FROM CN2-6, SD-17

SG-125 BOARD

SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

AC-77/77A BOARD
AC-58/58A BOARD
PS-82 BOARD
SOLDERING SIDE


CN1
F1
D1
D2
C1
C2
C3
C4
C5
R1
CN3
F2
F3
C7
CN4
C12
C13
C14
D5
R2
D3
D4
C8
C9
C10
C11
C6
CN5
CN2
CN6
Ⓩ3V-0



HN-72 BOARD

— SOLDERING SIDE —

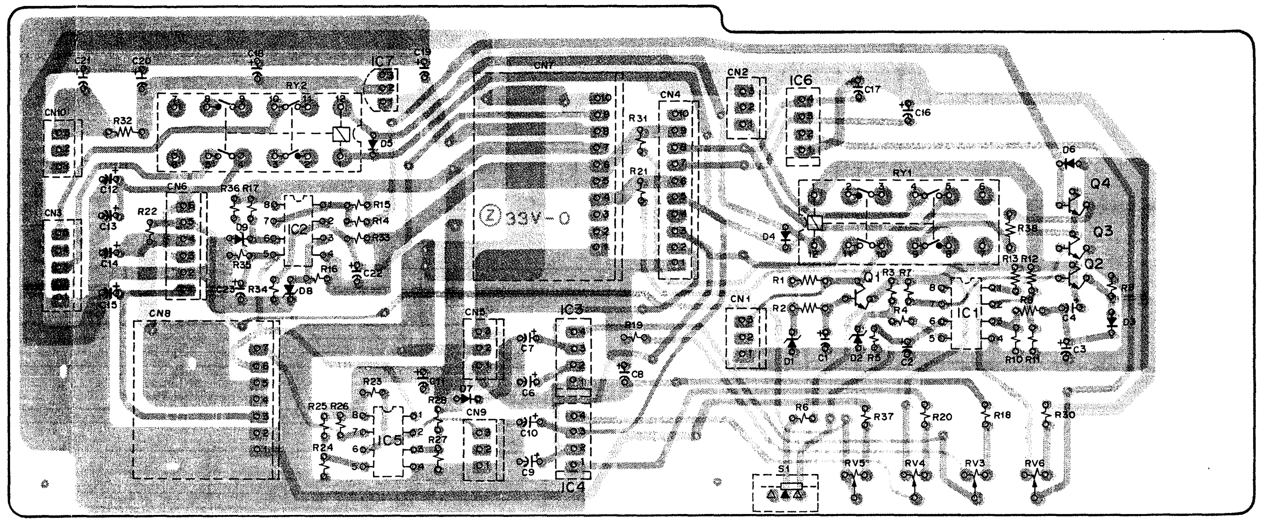
1-618-285-11

SEG-2550 (J/UC)
SEG-2550P (AE/UK)
SEG-2550PM (BR)
SEG-2550A (J/UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

AC-58/58A BOARD

— SOLDERING SIDE —

1-617-827-14 (58A BOARD)
SEG-2550P (EK) 10186 ~
SEG-2550AP(EK)
1-617-827-24 (58 BOARD)
SEG-2550 (J) 10041 ~
SEG-2550 (UC) 10146 ~
SEG-2550PM (BR) 10001 ~
SEG-2550A (J)
SEG-2550A (UC)
SEG-2550APM (BR)

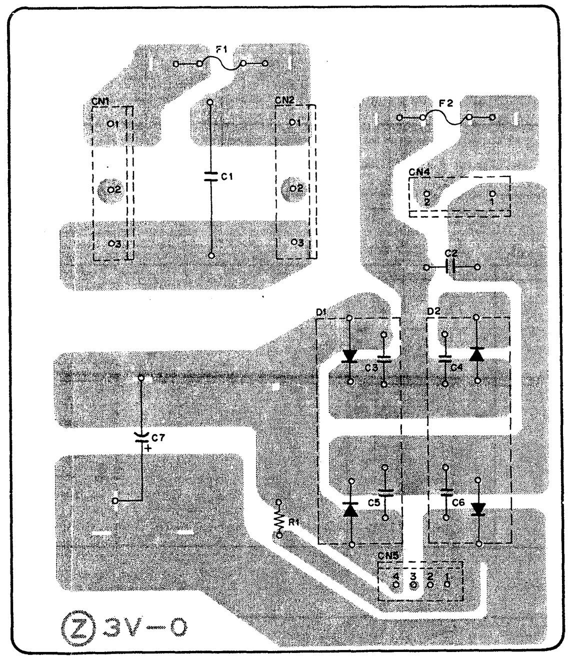

CN10
CN3
CN6
CN8
CN7
CN5
CN9
CN4
CN2
CN1
IC1
IC2
IC3
IC4
IC5
IC6
IC7
RY1
RY2
Q1
Q2
Q3
Q4
S1
RV1
RV3
RV4
RV5
RV6
Ⓩ33V-0

PS-82 BOARD

— SOLDERING SIDE —

1-617-835-14

SEG-2550 (J) 10041~
SEG-2550 (UC) 10146~
SEG-2550P (EK) 10186 ~
SEG-2550PM (BR) 10001 ~
SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

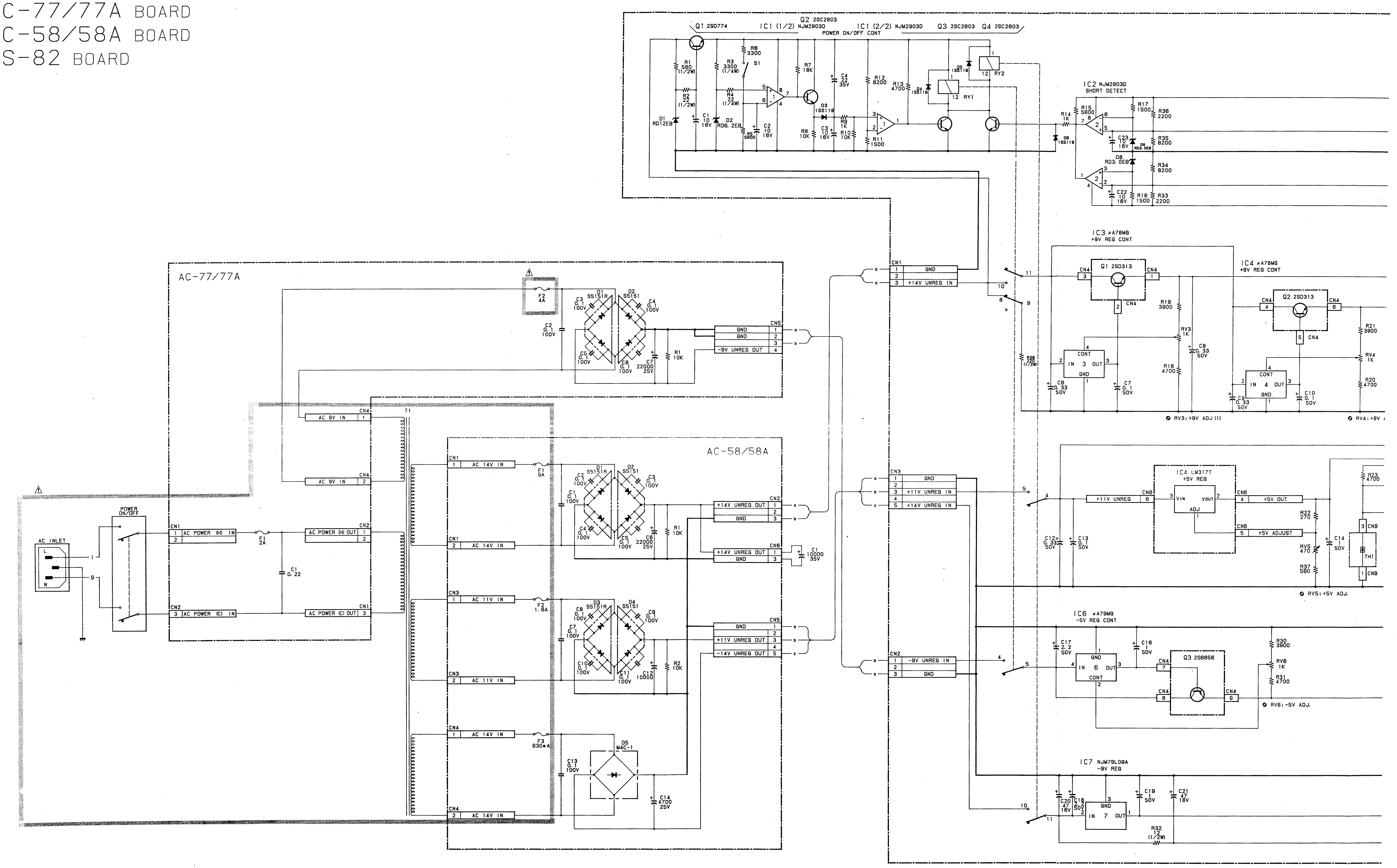

F1
F2
CN1
CN2
CN4
CN5
C1
C2
C3
C4
C5
C6
C7
D1
D2
R1
Ⓩ3V-0

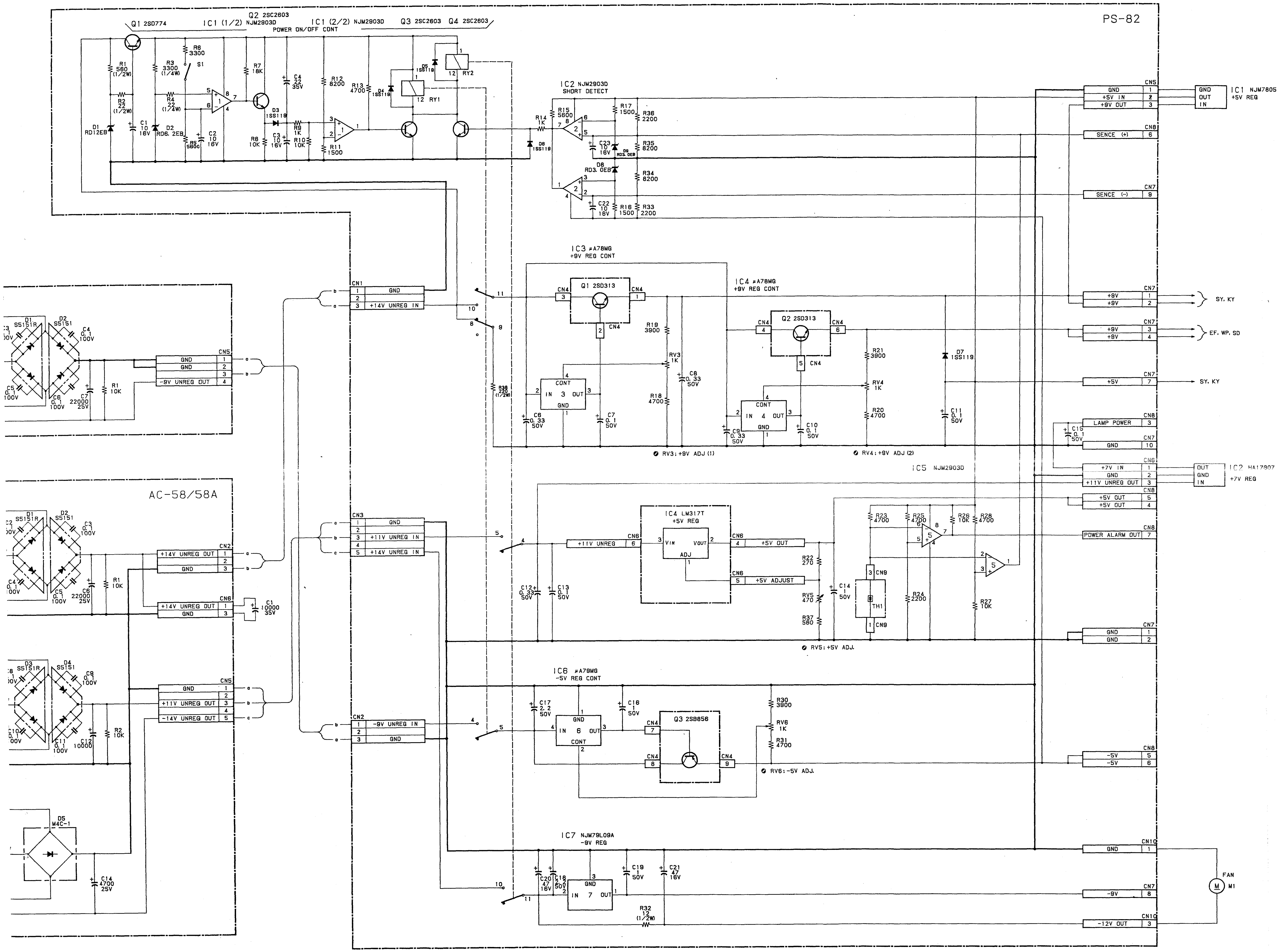
AC-77/77A BOARD

— SOLDERING SIDE —

1-619-553-11 (77A BOARD)
SEG-2550AP (EK)
1-619-553-21 (77 BOARD)
SEG-2550A (J)
SEG-2550A (UC)
SEG-2550APM (BR)

AC-77/77A BOARD
AC-58/58A BOARD
PS-82 BOARD

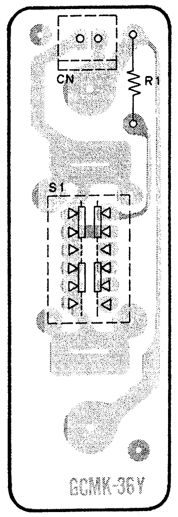

AC-77/77A
AC-58/58A
AC INLET
POWER ON/OFF
CN1 AC POWER (H) IN
CN2 AC POWER (C) IN
F1 2A
C1 0.22
CN2 AC POWER (H) OUT
CN1 AC POWER (C) OUT
CN4 AC 9V IN
T1
F2 4A
D1 S5151R
D2 S5151
C7 22000 25V
R1 10K
CN5 GND GND -9V UNREG OUT
CN1 AC 14V IN
CN3 AC 11V IN
CN4 AC 14V IN
F1 5A
F2 1.6A
F3 630mA
D5 M4C-1
C14 4700 25V
CN2 +14V UNREG OUT GND
CN6 +14V UNREG OUT GND
C1 10000 35V
CN5 GND +11V UNREG OUT -14V UNREG OUT
Q1 2SD774
Q2 2SC2603
IC1 (1/2) NJM2903D
IC1 (2/2) NJM2903D
POWER ON/OFF CONT
Q3 2SC2603
Q4 2SC2603
RY1
RY2
IC2 NJM2903D SHORT DETECT
CN1 GND +14V UNREG IN
IC3 µA78MG +9V REG CONT
Q1 2SD313
IC4 µA78MG +9V REG CONT
Q2 2SD313
RV3: +9V ADJ (1)
RV4: +9V
CN3 GND +11V UNREG IN +14V UNREG IN
IC4 LM317T +5V REG
+11V UNREG
+5V OUT
+5V ADJUST
RV5: +5V ADJ.
TH1
CN2 -9V UNREG IN GND
IC6 µA79MG -5V REG CONT
Q3 2SB856
RV6: -5V ADJ.
IC7 NJM79L09A -9V REG
R32 12 (1/2W)


PS-82
Q1 2SD774
Q2 2SC2603
IC1 (1/2) NJM2903D
IC1 (2/2) NJM2903D
POWER ON/OFF CONT
Q3 2SC2603
Q4 2SC2603
RY1
RY2
S1
IC2 NJM2903D
SHORT DETECT
IC1 NJM7805
+5V REG
GND
+5V IN
+9V OUT
OUT
IN
SENCE (+)
SENCE (-)
IC3 µA78MG
+9V REG CONT
IC4 µA78MG
+9V REG CONT
Q1 2SD313
Q2 2SD313
CONT
GND
+9V
SY, KY
EF, WP, SD
+5V
LAMP POWER
RV3: +9V ADJ (1)
RV4: +9V ADJ (2)
IC5 NJM2903D
+7V IN
+11V UNREG OUT
IC2 HA17807
+7V REG
+5V OUT
POWER ALARM OUT
IC4 LM317T
+5V REG
VIN
VOUT
ADJ
+11V UNREG
+5V ADJUST
TH1
RV5: +5V ADJ.
IC6 µA79MG
-5V REG CONT
Q3 2SB856
RV6: -5V ADJ.
-5V
IC7 NJM79L09A
-9V REG
-9V
-12V OUT
FAN
M1
CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN8
CN9
CN10
+14V UNREG IN
+11V UNREG IN
-9V UNREG IN
-14V UNREG IN
AC-58/58A
-9V UNREG OUT
+14V UNREG OUT
+11V UNREG OUT
-14V UNREG OUT
S5151R
S5151
M4C-1

POWER UNIT

SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

HN-31 BOARD
SW-94 BOARD
SW-100 BOARD
SOLDERING SIDE

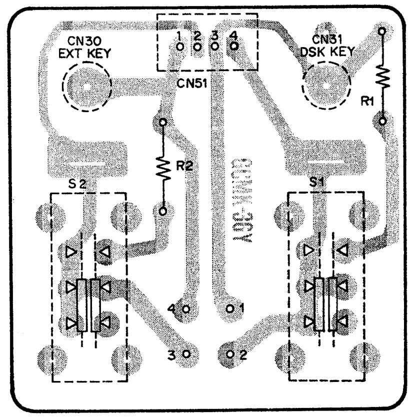

CN
R1
S1
GCMK-36Y

SW-94 BOARD

—SOLDERING SIDE—

1-617-836-11,12,13

SEG-2550	(J/UC)
SEG-2550P	(EK)
SEG-2550PM	(BR)
SEG-2550A	(J/UC)
SEG-2550AP	(EK)
SEG-2550APM	(BR)

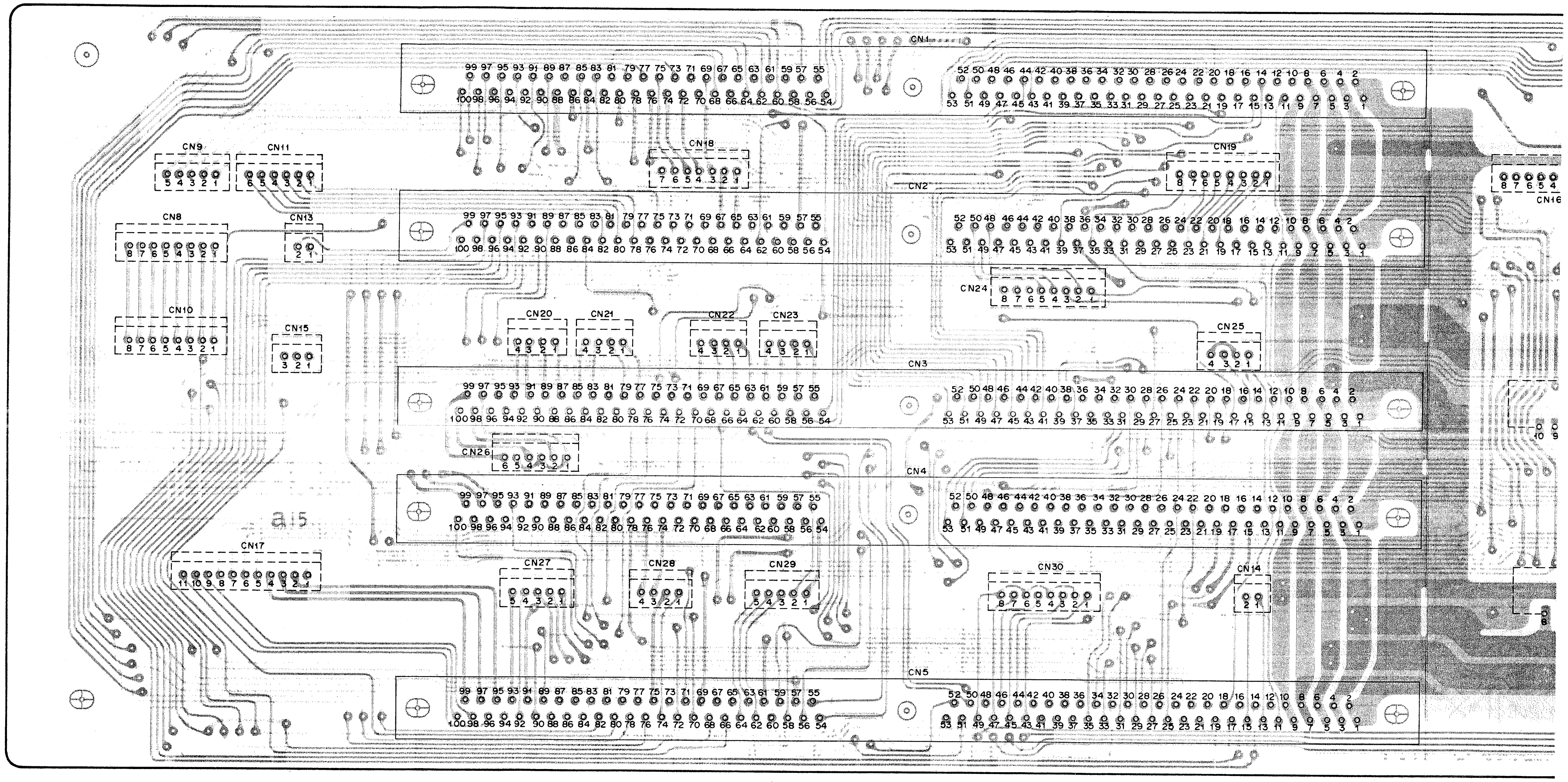

CN30
EXT KEY
1 2 3 4
CN31
DSK KEY
CN51
R1
R2
S2
S1
GCMK-36Y
4
1
3
2

SW-100 BOARD

— SOLDERING SIDE —

1-617-828-12,13

SEG-2550	(J/UC)
SEG-2550P	(EK)
SEG-2550PM	(BR)
SEG-2550A	(J/UC)
SEG-2550AP	(EK)
SEG-2550APM	(BR)


CN1
CN9
CN11
CN18
CN19
CN2
CN16
CN8
CN13
CN24
CN10
CN15
CN20
CN21
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CN23
CN25
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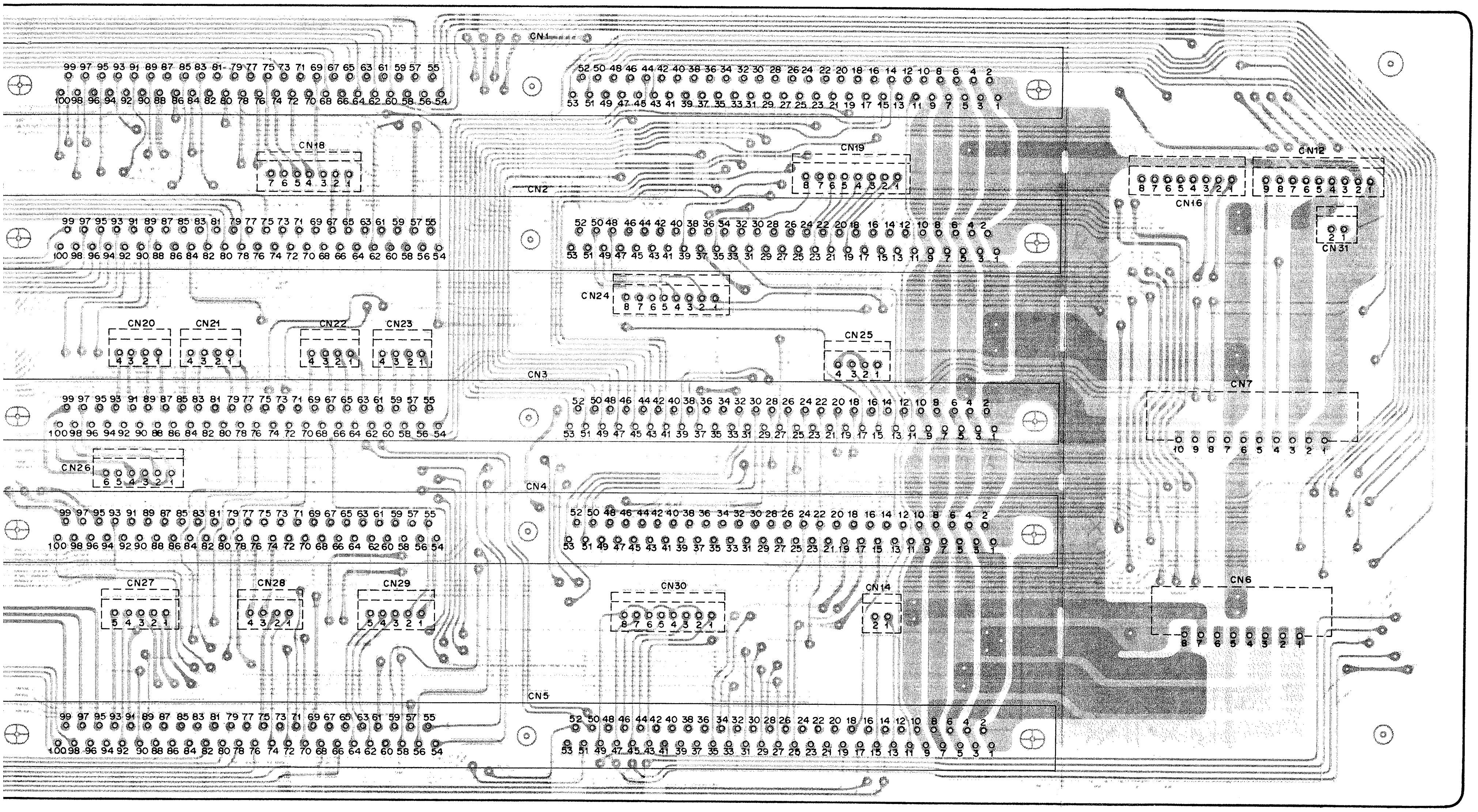
CN28
CN29
CN30
CN14
CN5


CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN12
CN14
CN16
CN18
CN19
CN20
CN21
CN22
CN23
CN24
CN25
CN26
CN27
CN28
CN29
CN30
CN31

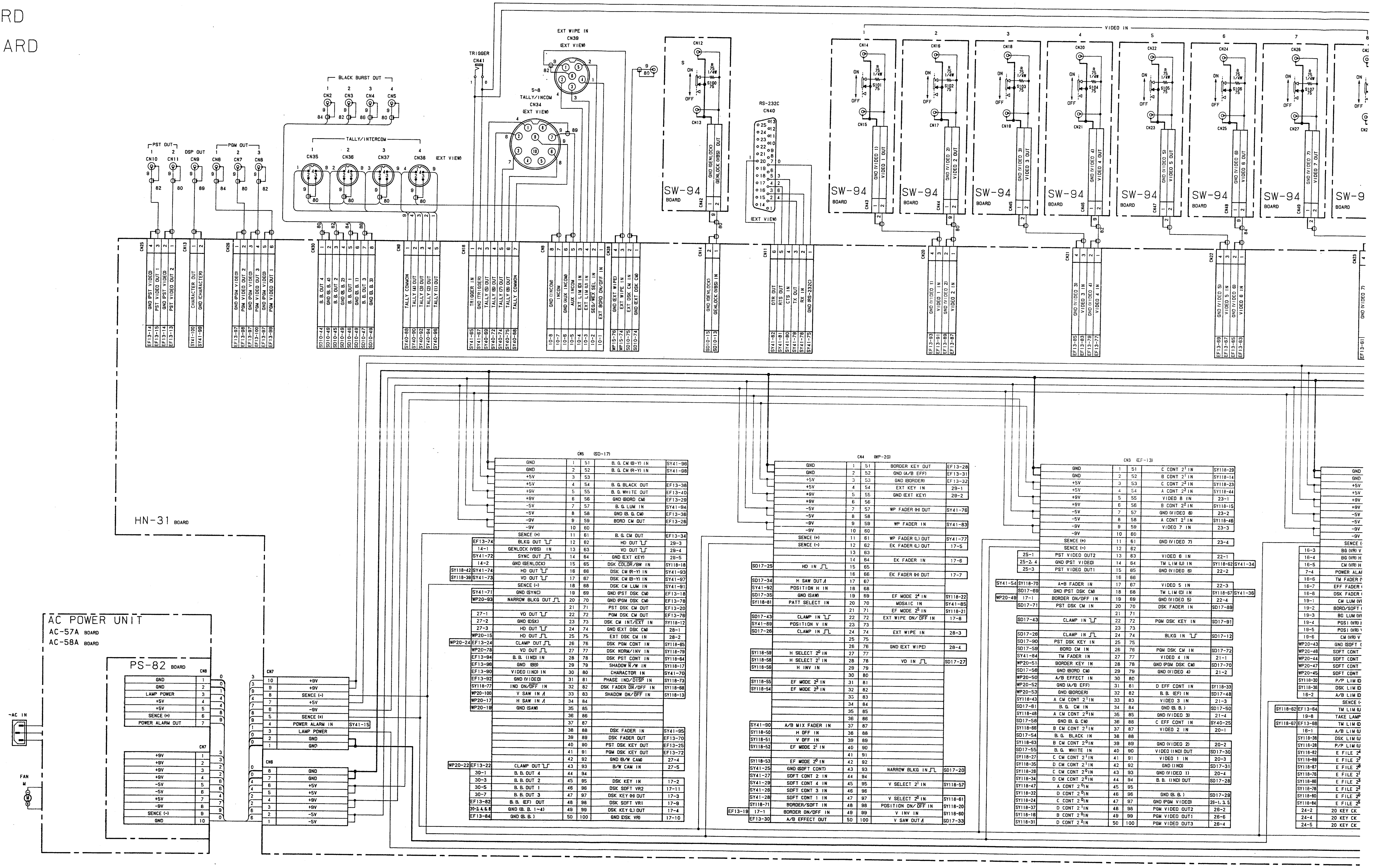
HN-31 BOARD

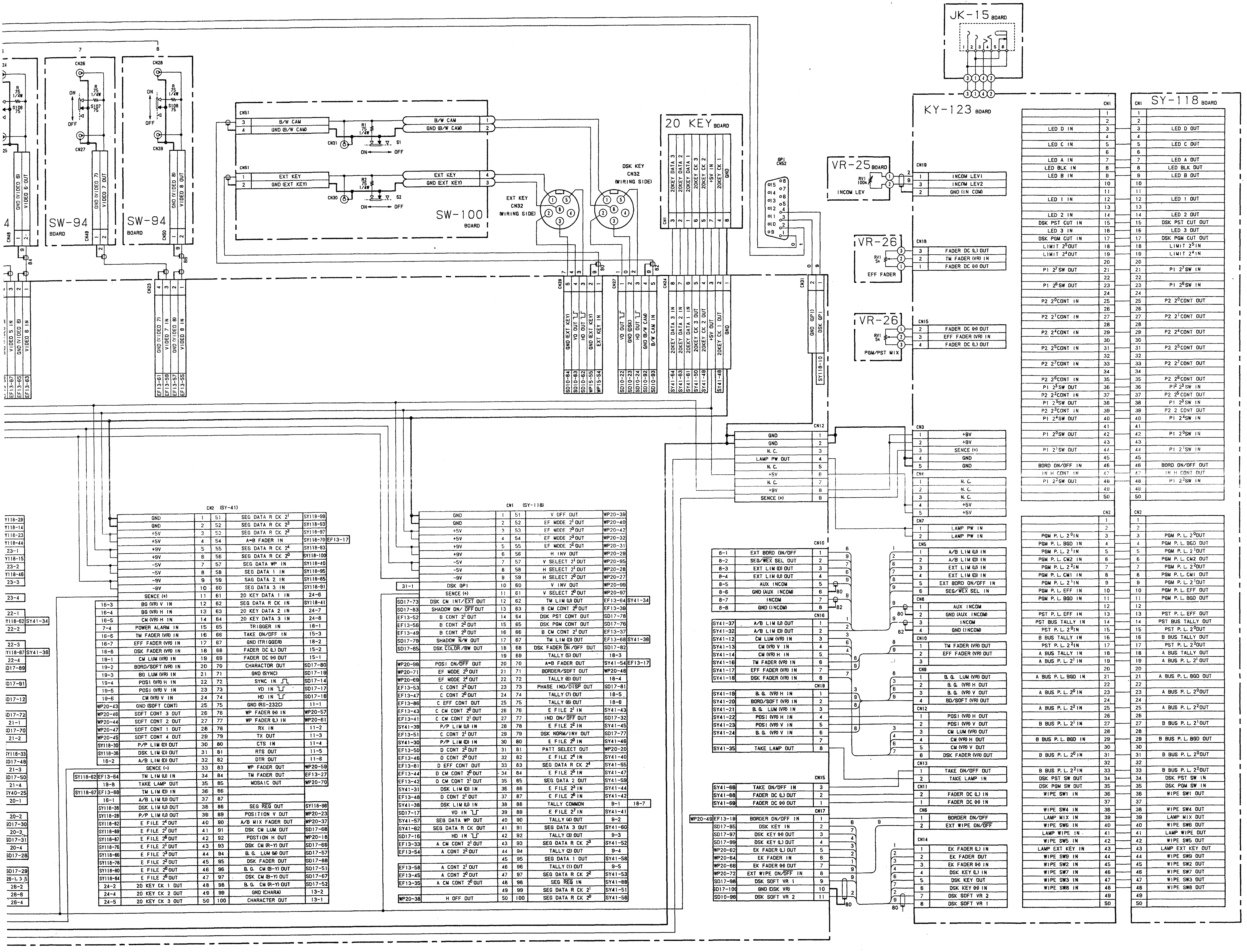
— SOLDERING SIDE —

1-617-820-14

SEG-2550A (J)
SEG-2550A (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

HN-31 BOARD
SW-94 BOARD
SW-100 BOARD


VIDEO IN
EXT WIPE IN
CN39
(EXT VIEW)
TRIGGER
CN41
BLACK BURST OUT
CN2 CN3 CN4 CN5
S-8
TALLY/INCOM
CN34
(EXT VIEW)
TALLY/INTERCOM
CN35 CN36 CN37 CN38 (EXT VIEW)
PST OUT
DSP OUT
PGM OUT
CN10 CN11 CN9 CN6 CN7 CN8
RS-232C
CN40
(EXT VIEW)
SW-94 BOARD
HN-31 BOARD
AC POWER UNIT
AC-57A BOARD
AC-58A BOARD
PS-82 BOARD
~AC IN
FAN
CN5 (SD-17)
CN4 (WP-20)
CN3 (EF-13)


SW-94 BOARD
SW-94 BOARD
SW-100 BOARD
DSK KEY CN32 (WIRING SIDE)
EXT KEY CN32 (WIRING SIDE)
20 KEY BOARD
JK-15 BOARD
KY-123 BOARD
SY-118 BOARD
VR-25 BOARD
INCOM LEV
VR-26
EFF FADER
VR-26
PGM/PST MIX
CN2 (SY-41)
CN1 (SY-118)

FRAME
SEG-2550A (J) (UC)
SEG-2550AP (EK)
SEG-2550APM (BR)

SECTION 3
SEMICONDUCTOR

The circuit diagram of is obtained from the IC data book published by the manufacturer.

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1SS148.......11-2
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2SA1162......11-2
2SA1175......11-2
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2SC1623......11-2
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2SC2603......11-2
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2SC2712......11-2
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2SC2771......11-2
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2SC2812......11-2

2SD774.......11-2
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HD14042BP.....11-7
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RD??M.........11-2

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TC4001BF......11-6
TC4001BP......11-6
TC4011BF......11-6
TC4011BP......11-6
TC4012BP......11-6
TC4017BF......11-12
TC4023BF......11-13
TC4023BP......11-13
TC4024BP......11-13
TC4028BF......11-7
TC4028BP......11-7
TC4042BP......11-7
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TC4049BP......11-7
TC4050BF......11-7
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TC4051BF......11-14
TC4052BFHB....11-8
TC4052BPHB....11-8
TC4053BFHB....11-8
TC4053BPHB....11-8
TC4066BFHB....11-8
TC4069UBP.....11-8
TC4071BF......11-8
TC4075BF......11-14
TC4081BF......11-14

TYPE PAGE

TC40H000P.....11-14
TC40H002F.....11-14
TC40H002P.....11-14

TC4512BF......11-9
TC4516BF......11-14
TC4528BF......11-14
TC4528BFHB....11-14
TC4528BP......11-14
TC4528BPHB....11-14
TC4532BP......11-9
TC4538BP......11-9
TC4556BF......11-15
TC5012BF......11-15
TC5020BP......11-15
TC504013BF....11-15
TC504027BP....11-15
TC5069BP......11-15
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TC74HC374F....11-16
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TL064CNS......11-16
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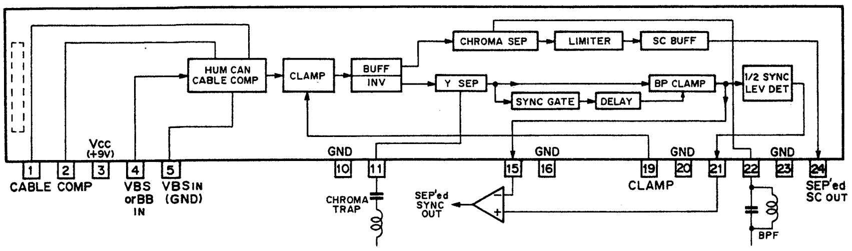
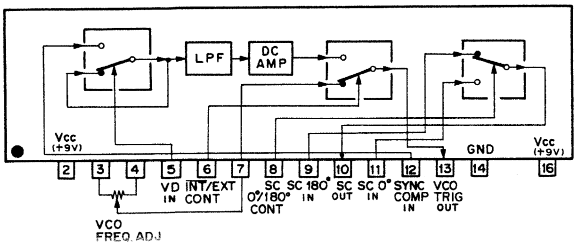
uPD4023BC.....11-13
uPD4024BC.....11-13
uPD4052BC.....11-8
uPD4053BC.....11-8
uPD8749HD.....11-17

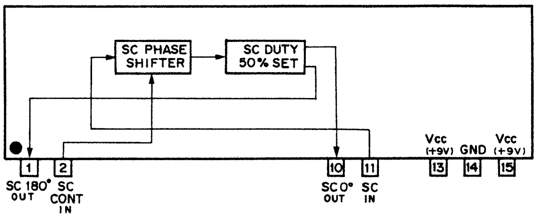
BX1040 (SONY)
SYNC SEPARATOR
— REAR VIEW —


HUM CAN
CABLE COMP
CLAMP
BUFF
INV
CHROMA SEP
LIMITER
SC BUFF
Y SEP
SYNC GATE
DELAY
BP CLAMP
1/2 SYNC
LEV DET
Vcc
(+9V)
GND
GND
GND
GND
1
2
3
4
5
10
11
15
16
19
20
21
22
23
24
CABLE COMP
VBS
orBB
IN
VBSIN
(GND)
CHROMA
TRAP
SEP'ed
SYNC
OUT
CLAMP
BPF
SEP'ed
SC OUT

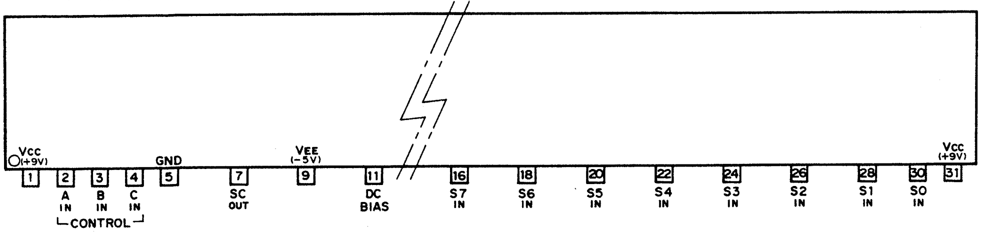
BX1291 (SONY)
APC AMPLIFIER AND SC 0/180° SELECTOR
— REAR VIEW —

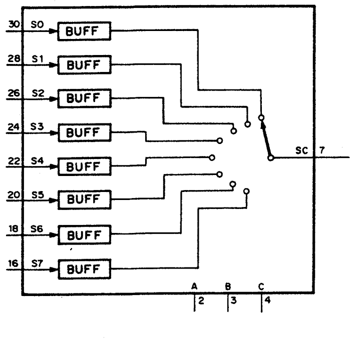

LPF
DC
AMP
Vcc
(+9V)
GND
Vcc
(+9V)
2
3
4
5
6
7
8
9
10
11
12
13
14
16
VD
IN
INT/EXT
CONT
SC
0°/180°
CONT
SC 180°
IN
SC
OUT
SC 0°
IN
SYNC
COMP
IN
VCO
TRIG
OUT
VCO
FREQ. ADJ

BX1292 (SONY)
BX1293 (SONY)
SC PHASE SHIFTER
— REAR VIEW —


SC PHASE
SHIFTER
SC DUTY
50% SET
Vcc
(+9V)
GND
Vcc
(+9V)
1
2
10
11
13
14
15
SC 180°
OUT
SC
CONT
IN
SC 0°
OUT
SC
IN

BX1373 (SONY)
8-CHANNEL MULTIPLEXER
— PRINTED SIDE VIEW —

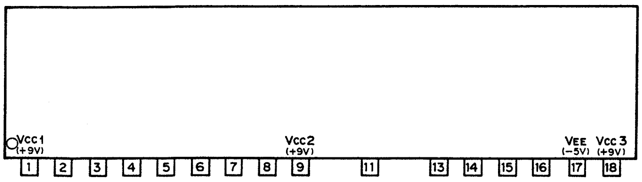

Vcc
(+9V)
GND
VEE
(−5V)
Vcc
(+9V)
1
2
3
4
5
7
9
11
16
18
20
22
24
26
28
30
31
A
IN
B
IN
C
IN
CONTROL
SC
OUT
DC
BIAS
S7
IN
S6
IN
S5
IN
S4
IN
S3
IN
S2
IN
S1
IN
S0
IN

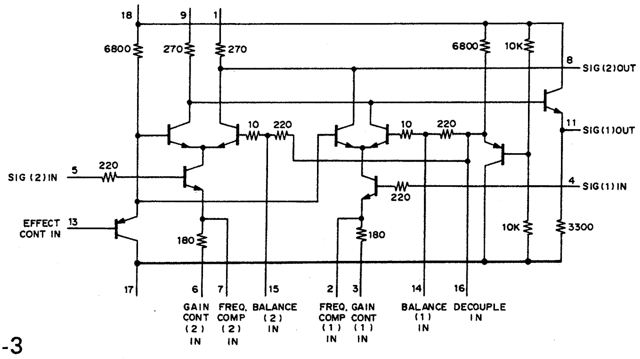

30
S0
28
S1
26
S2
24
S3
22
S4
20
S5
18
S6
16
S7
BUFF
SC
7
A
B
C
2
3
4

C	B	A	"ON" CHANEL
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	0	0	4
1	0	1	5
1	1	0	6
1	1	1	7

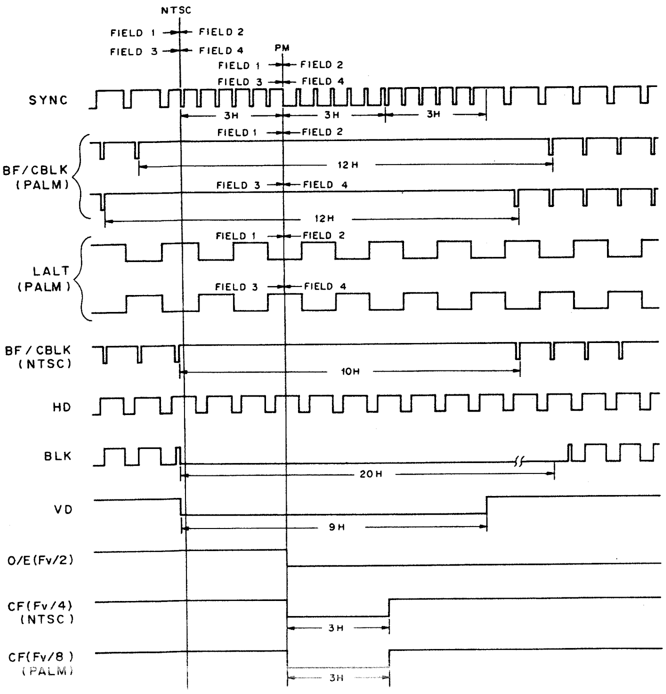
1 ; HIGH LEVEL
0 ; LOW LEVEL

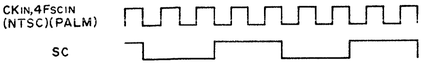
BX1374 (SONY)
WIPE/MIX EFFECT AMPLIFIER
— PRINTED SIDE VIEW —


Vcc1
(+9V)
Vcc2
(+9V)
VEE
(−5V)
Vcc3
(+9V)
1
2
3
4
5
6
7
8
9
11
13
14
15
16
17
18

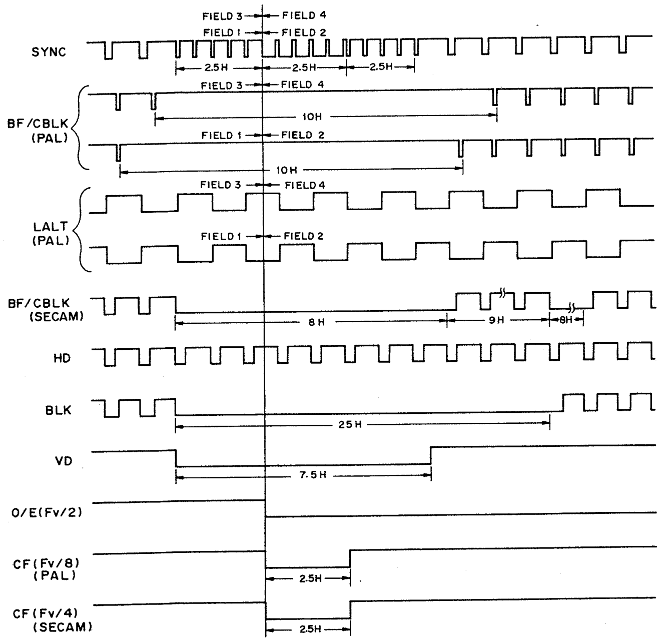

18
9
1
6800
270
270
6800
10K
8
SIG (2) OUT
10
220
10
220
11
SIG (1) OUT
SIG (2) IN
5
220
4
SIG (1) IN
220
EFFECT
CONT IN
13
180
180
10K
3300
17
6
7
15
2
3
14
16
GAIN
CONT
(2)
IN
FREQ.
COMP
(2)
IN
BALANCE
(2)
IN
FREQ.
COMP
(1)
IN
GAIN
CONT
(1)
IN
BALANCE
(1)
IN
DECOUPLE
IN

NTSC, PAL−M (FIELD 2, 4)

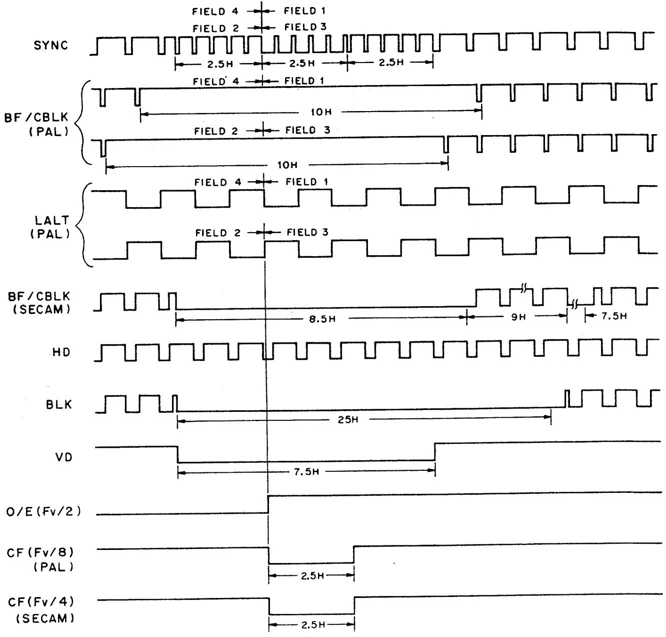

NTSC
FIELD 1 → FIELD 2
FIELD 3 → FIELD 4
PM
FIELD 1 → FIELD 2
FIELD 3 → FIELD 4
SYNC
3H
3H
3H
FIELD 1 → FIELD 2
BF/CBLK (PALM)
12H
FIELD 3 → FIELD 4
12H
FIELD 1 → FIELD 2
LALT (PALM)
FIELD 3 → FIELD 4
BF / CBLK (NTSC)
10H
HD
BLK
20H
VD
9H
O/E(Fv/2)
CF(Fv/4) (NTSC)
3H
CF(Fv/8) (PALM)
3H

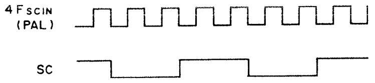

CKIN,4FSCIN (NTSC)(PALM)
SC

PAL, SECAM (FIELD 4,2)

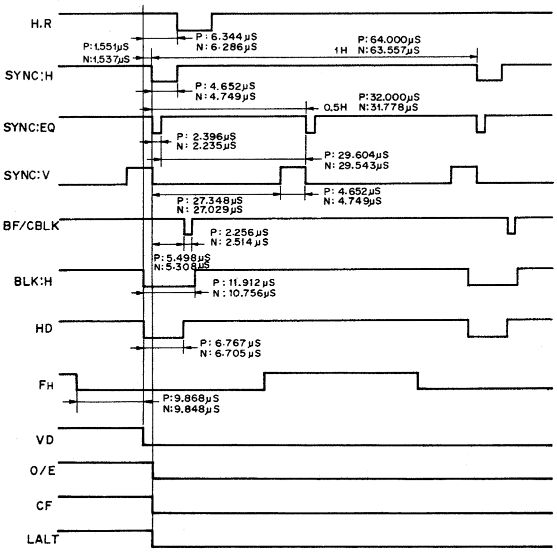

FIELD 3 → FIELD 4
FIELD 1 → FIELD 2
SYNC
2.5H
2.5H
2.5H
FIELD 3 → FIELD 4
BF/CBLK (PAL)
10H
FIELD 1 → FIELD 2
10H
FIELD 3 → FIELD 4
LALT (PAL)
FIELD 1 → FIELD 2
BF/CBLK (SECAM)
8H
9H
8H
HD
BLK
25H
VD
7.5H
O/E(Fv/2)
CF(Fv/8) (PAL)
2.5H
CF(Fv/4) (SECAM)
2.5H

PAL, SECAM (FIELD 1,3)

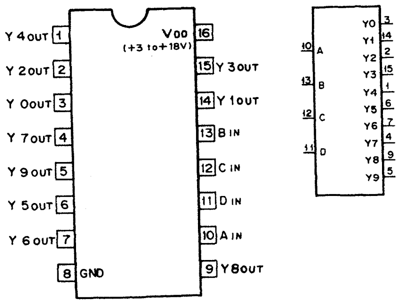

FIELD 4 → FIELD 1
FIELD 2 → FIELD 3
SYNC
2.5H
2.5H
2.5H
FIELD 4 → FIELD 1
BF/CBLK (PAL)
10H
FIELD 2 → FIELD 3
10H
FIELD 4 → FIELD 1
LALT (PAL)
FIELD 2 → FIELD 3
BF/CBLK (SECAM)
8.5H
9H
7.5H
HD
BLK
25H
VD
7.5H
O/E(Fv/2)
CF(Fv/8) (PAL)
2.5H
CF(Fv/4) (SECAM)
2.5H


4FSCIN (PAL)
SC

P: PAL, SECAM
N: NTSC, PALM


H.R
P: 6.344μS
N: 6.286μS
P: 1.551μS
N: 1.537μS
1H
P: 64.000μS
N: 63.557μS
SYNC:H
P: 4.652μS
N: 4.749μS
0.5H
P: 32.000μS
N: 31.778μS
SYNC:EQ
P: 2.396μS
N: 2.235μS
P: 29.604μS
N: 29.543μS
SYNC:V
P: 27.348μS
N: 27.029μS
P: 4.652μS
N: 4.749μS
BF/CBLK
P: 2.256μS
N: 2.514μS
P: 5.498μS
N: 5.308μS
BLK:H
P: 11.912μS
N: 10.756μS
HD
P: 6.767μS
N: 6.705μS
FH
P: 9.868μS
N: 9.848μS
VD
O/E
CF
LALT

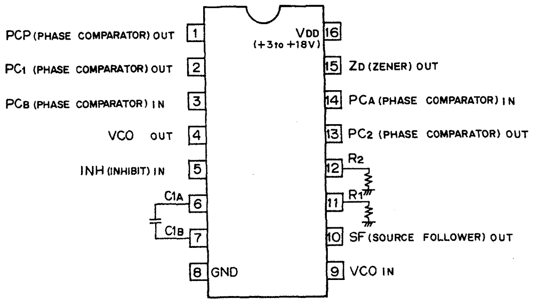
HD14028BP (HITACHI)
TC4028BF (TOSHIBA) FLAT PACKAGE
TC4028BP (TOSHIBA)
C-MOS BCD TO DECIMAL DECODER
— TOP VIEW —

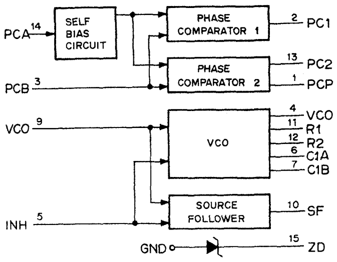

Y 4OUT 1
Y 2OUT 2
Y 0OUT 3
Y 7OUT 4
Y 9OUT 5
Y 5OUT 6
Y 6OUT 7
8 GND
VDD (+3 to+18V) 16
15 Y 3OUT
14 Y 1OUT
13 B IN
12 C IN
11 D IN
10 A IN
9 Y8OUT
10 A
13 B
12 C
11 D
Y0 3
Y1 14
Y2 2
Y3 15
Y4 1
Y5 6
Y6 7
Y7 4
Y8 9
Y9 5

STATE	INPUTS				OUTPUTS									
	D	C	B	A	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9
0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1	0	0	0	1	0	1	0	0	0	0	0	0	0	0
2	0	0	1	0	0	0	1	0	0	0	0	0	0	0
3	0	0	1	1	0	0	0	1	0	0	0	0	0	0
4	0	1	0	0	0	0	0	0	1	0	0	0	0	0
5	0	1	0	1	0	0	0	0	0	1	0	0	0	0
6	0	1	1	0	0	0	0	0	0	0	1	0	0	0
7	0	1	1	1	0	0	0	0	0	0	0	1	0	0
8	1	X	X	0	0	0	0	0	0	0	0	0	1	0
9	1	X	X	1	0	0	0	0	0	0	0	0	0	1

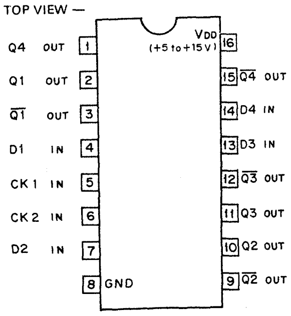
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

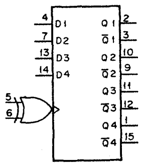
HD14046BP (HITACHI)
MC14046BCP (MOTOROLA)
C-MOS PHASE LOCKED LOOP
— TOP VIEW —


PCP (PHASE COMPARATOR) OUT 1
PC1 (PHASE COMPARATOR) OUT 2
PCB (PHASE COMPARATOR) IN 3
VCO OUT 4
INH (INHIBIT) IN 5
C1A 6
C1B 7
8 GND
VDD (+3to+18V) 16
15 ZD (ZENER) OUT
14 PCA (PHASE COMPARATOR) IN
13 PC2 (PHASE COMPARATOR) OUT
12 R2
11 R1
10 SF (SOURCE FOLLOWER) OUT
9 VCO IN


PCA 14
SELF BIAS CIRCUIT
PHASE COMPARATOR 1
2 PC1
PHASE COMPARATOR 2
13 PC2
1 PCP
PCB 3
VCO 9
VCO
4 VCO
11 R1
12 R2
6 C1A
7 C1B
INH 5
SOURCE FOLLOWER
10 SF
GND
15 ZD

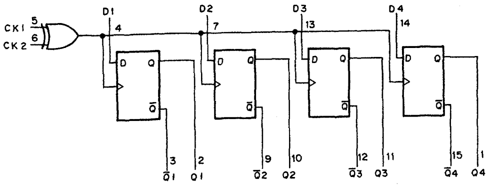
HD14042BFP (HITACHI) FLAT PACKAGE
HD14042BP (HITACHI)
TC4042BP (TOSHIBA)
C-MOS D-TYPE LATCH
— TOP VIEW —


Q4 OUT 1
Q1 OUT 2
Q̄1 OUT 3
D1 IN 4
CK1 IN 5
CK2 IN 6
D2 IN 7
8 GND
VDD (+5 to+15V) 16
15 Q̄4 OUT
14 D4 IN
13 D3 IN
12 Q̄3 OUT
11 Q3 OUT
10 Q2 OUT
9 Q̄2 OUT

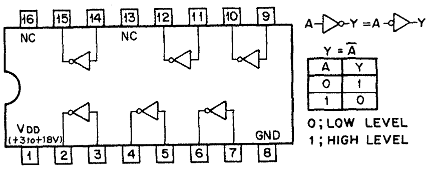

4 D1
7 D2
13 D3
14 D4
5
6
Q1 2
Q̄1 3
Q2 10
Q̄2 9
Q3 11
Q̄3 12
Q4 1
Q̄4 15

FUNCTION TABLE

CK1	CK2	Q / Q̄
0	0	PASS DATA
0	1	LATCH DATA
1	0	LATCH DATA
1	1	PASS DATA


CK1 5
CK2 6
D1 4
D2 7
D3 13
D4 14
D Q
Q̄
3 Q̄1
2 Q1
9 Q̄2
10 Q2
12 Q̄3
11 Q3
15 Q̄4
1 Q4

HD14049UBP (HITACHI)
TC4049BF (TOSHIBA) FLAT PACKAGE
TC4049BP (TOSHIBA)
C-MOS INVERTING TYPE BUFFER/CONVERTER
— TOP VIEW —

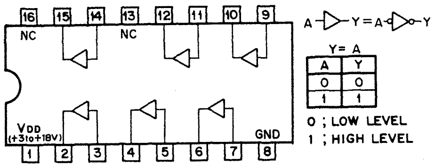

16 15 14 13 12 11 10 9
NC
NC
VDD (+3to+18V)
GND
1 2 3 4 5 6 7 8
A Y = A Y

Y = Ā

A	Y
0	1
1	0

0; LOW LEVEL
1; HIGH LEVEL

HD14050BFP (HITACHI) FLAT PACAKGE
TC4050BF (TOSHIBA) FLAT PACKAGE
TC4050BP (TOSHIBA)
C-MOS NON-INVERTING TYPE BUFFER/CONVERTER
— TOP VIEW —


16 15 14 13 12 11 10 9
NC
NC
VDD (+3to+18V)
GND
1 2 3 4 5 6 7 8
A Y = A Y

Y= A

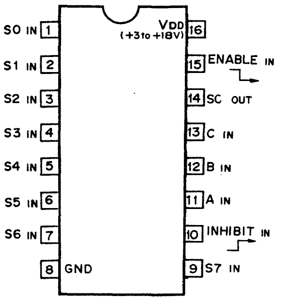
A	Y
0	0
1	1

0 ; LOW LEVEL
1 ; HIGH LEVEL

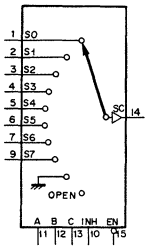
HD14512BFP (HITACHI) FLAT PACKAGE
TC4512BF (TOSHIBA) FLAT PACKAGE

C-MOS 8-CHANNEL DATA SELECTOR/MULTIPLEXER

— TOP VIEW —



S0 IN 1
S1 IN 2
S2 IN 3
S3 IN 4
S4 IN 5
S5 IN 6
S6 IN 7
8 GND
VDD (+3to+18V) 16
15 ENABLE IN
14 SC OUT
13 C IN
12 B IN
11 A IN
10 INHIBIT IN
9 S7 IN



1 S0
2 S1
3 S2
4 S3
5 S4
6 S5
7 S6
9 S7
SC 14
OPEN
A B C INH EN
11 12 13 10 15

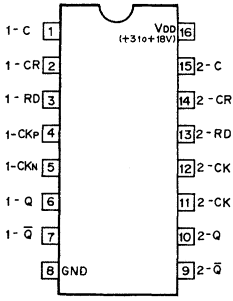
CONTROL INPUTS					OUTPUT
EN	INH	C	B	A	SC
0	0	0	0	0	S0
0	0	0	0	1	S1
0	0	0	1	0	S2
0	0	0	1	1	S3
0	0	1	0	0	S4
0	0	1	0	1	S5
0	0	1	1	0	S6
0	0	1	1	1	S7
0	1	X	X	X	GND
1	X	X	X	X	OPEN

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

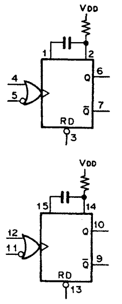
HD14538BP (HITACHI)
TC4538BP (TOSHIBA)

C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR

— TOP VIEW —



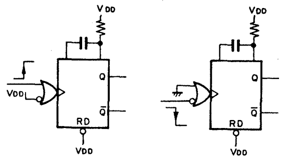
1-C 1
1-CR 2
1-RD 3
1-CKP 4
1-CKN 5
1-Q 6
1-Q̄ 7
8 GND
VDD (+3to+18V) 16
15 2-C
14 2-CR
13 2-RD
12 2-CKP
11 2-CKN
10 2-Q
9 2-Q̄



VDD
1
2
4
5
Q 6
Q̄ 7
RD
3
VDD
15
14
12
11
Q 10
Q̄ 9
RD
13

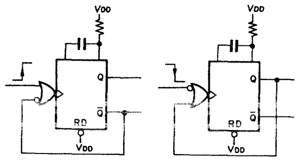
OUTPUT PULSE WIDTH=CR

RETRIGGERABLE M.M.V



VDD
VDD
Q
Q̄
RD
VDD
VDD
Q
Q̄
RD
VDD

NON-RETRIGGERABLE M.M.V

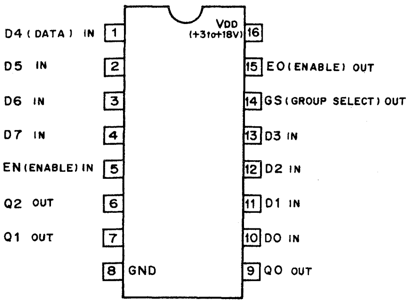


VDD
VDD
Q
Q̄
RD
VDD
Q
Q̄
RD
VDD

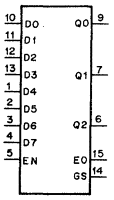
HD14532BP (HITACHI)
TC4532BP (TOSHIBA)

C-MOS 8-BIT PRIORITY ENCODER

— TOP VIEW —



D4 (DATA) IN 1
D5 IN 2
D6 IN 3
D7 IN 4
EN (ENABLE) IN 5
Q2 OUT 6
Q1 OUT 7
8 GND
VDD (+3to+18V) 16
15 EO (ENABLE) OUT
14 GS (GROUP SELECT) OUT
13 D3 IN
12 D2 IN
11 D1 IN
10 D0 IN
9 Q0 OUT

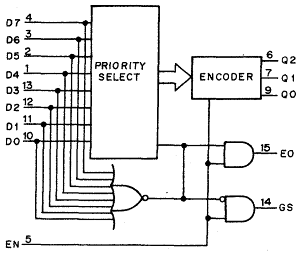


10 D0
11 D1
12 D2
13 D3
1 D4
2 D5
3 D6
4 D7
5 EN
Q0 9
Q1 7
Q2 6
EO 15
GS 14

D7 IS THE HIGHEST PRIORITY

INPUTS									OUTPUTS				
EN	D7	D6	D5	D4	D3	D2	D1	D0	GS	Q2	Q1	Q0	EO
0	X	X	X	X	X	X	X	X	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	1
1	1	X	X	X	X	X	X	X	1	1	1	1	0
1	0	1	X	X	X	X	X	X	1	1	1	0	0
1	0	0	1	X	X	X	X	X	1	1	0	1	0
1	0	0	0	1	X	X	X	X	1	1	0	0	0
1	0	0	0	0	1	X	X	X	1	0	1	1	0
1	0	0	0	0	0	1	X	X	1	0	1	0	0
1	0	0	0	0	0	0	1	X	1	0	0	1	0
1	0	0	0	0	0	0	0	1	1	0	0	0	0

1 :HIGH LEVEL
0: LOW LEVEL
X:DON'T CARE

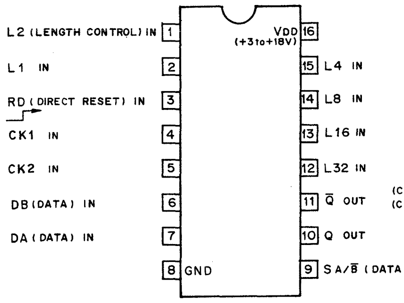


D7 4
D6 3
D5 2
D4 1
D3 13
D2 12
D1 11
D0 10
PRIORITY SELECT
ENCODER
6 Q2
7 Q1
9 Q0
15 EO
14 GS
EN 5

HD14557BP (HITACHI)
MC14557BCP (MOTOROLA)

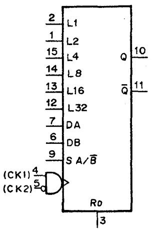
C-MOS 1-TO-64-BIT VARIABLE LENGTH SHIFT REGISTER

— TOP VIEW —



L2 (LENGTH CONTROL) IN 1
L1 IN 2
RD (DIRECT RESET) IN 3
CK1 IN 4
CK2 IN 5
DB (DATA) IN 6
DA (DATA) IN 7
8 GND
VDD (+3to+18V) 16
15 L4 IN
14 L8 IN
13 L16 IN
12 L32 IN
11 Q̄ OUT
10 Q OUT
9 SA/B̄ (DATA A OR B SELECT) IN

MC14557BCP



2 L1
1 L2
15 L4
14 L8
13 L16
12 L32
7 DA
6 DB
9 SA/B̄
(CK1) 4
(CK2) 5
Q 10
Q̄ 11
RD
3

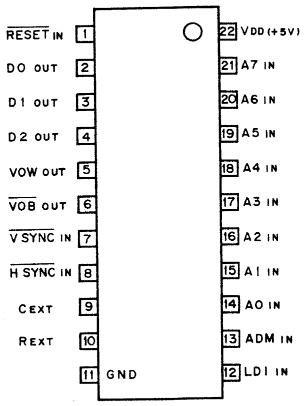
LENGTH SELECT TRUTH TABLE

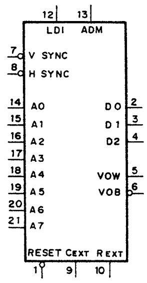
L32	L16	L8	L4	L2	L1	REGISTER LENGTH
0	0	0	0	0	0	1 - BIT
0	0	0	0	0	1	2 - BIT
0	0	0	0	1	0	3 - BIT
0	0	0	0	1	1	4 - BIT
0	0	0	1	0	0	5 - BIT
⋮	⋮	⋮	⋮	⋮	⋮	⋮
1	1	1	1	0	0	61 - BIT
1	1	1	1	0	1	62 - BIT
1	1	1	1	1	0	63 - BIT
1	1	1	1	1	1	64 - BIT

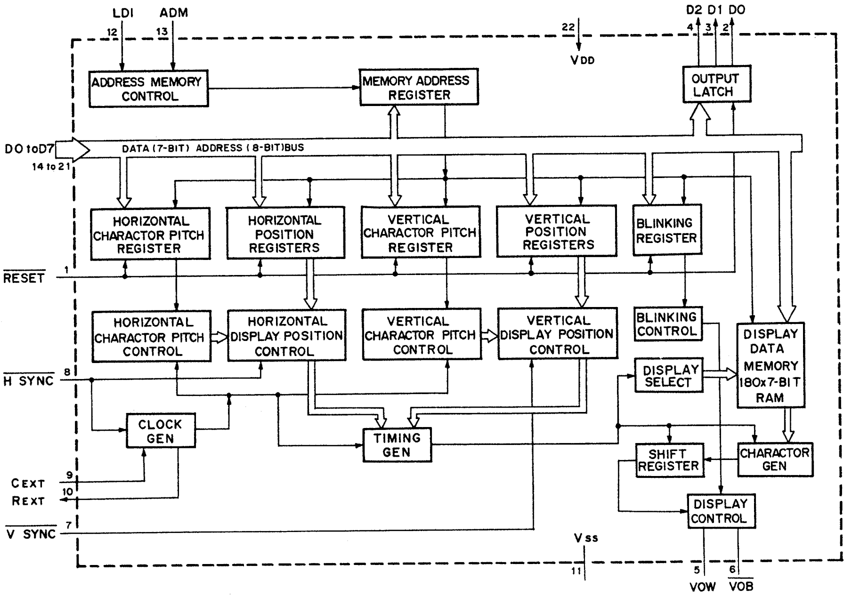
INPUTS				OUTPUT
RD	SA/B̄	CK1	CK2	Q
0	0	_⌐	0	DB
0	1	_⌐	0	DA
0	0	1	⌐_	DB
0	1	1	⌐_	DA
1	X	X	X	0

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

MB88303 (FUJITSU)
N-MOS PROGRAMMABLE TV DISPLAY CONTROLLER
— TOP VIEW —


RESET IN 1
DO OUT 2
D1 OUT 3
D2 OUT 4
VOW OUT 5
VOB OUT 6
V SYNC IN 7
H SYNC IN 8
CEXT 9
REXT 10
11 GND
22 VDD (+5V)
21 A7 IN
20 A6 IN
19 A5 IN
18 A4 IN
17 A3 IN
16 A2 IN
15 A1 IN
14 A0 IN
13 ADM IN
12 LDI IN

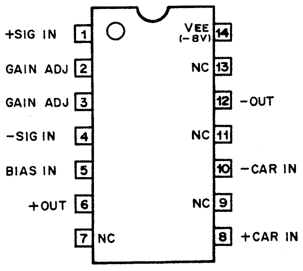

LDI
ADM
V SYNC
H SYNC
A0
A1
A2
A3
A4
A5
A6
A7
D0
D1
D2
VOW
VOB
RESET
CEXT
REXT

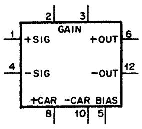

LDI
ADM
D2 D1 D0
VDD
ADDRESS MEMORY CONTROL
MEMORY ADDRESS REGISTER
OUTPUT LATCH
D0 to D7
14 to 21
DATA (7-BIT) ADDRESS (8-BIT) BUS
HORIZONTAL CHARACTOR PITCH REGISTER
HORIZONTAL POSITION REGISTERS
VERTICAL CHARACTOR PITCH REGISTER
VERTICAL POSITION REGISTERS
BLINKING REGISTER
RESET
HORIZONTAL CHARACTOR PITCH CONTROL
HORIZONTAL DISPLAY POSITION CONTROL
VERTICAL CHARACTOR PITCH CONTROL
VERTICAL DISPLAY POSITION CONTROL
BLINKING CONTROL
DISPLAY SELECT
DISPLAY DATA MEMORY 180x7-BIT RAM
H SYNC
CLOCK GEN
TIMING GEN
SHIFT REGISTER
CHARACTOR GEN
CEXT
REXT
V SYNC
DISPLAY CONTROL
VSS
VOW
VOB

ADM	; ADDRESS INCREMENT MODE
A0 to A7	; ADDRESS INPUT
D0 to D2	; DATA OUTPUT
CEXT	; EXT CAPACITOR FOR OSC
LDI	; LOAD DATA AND INSTRUCTION
VOB	; VIDEO BLACK OUT
VOW	; VIDEO WHITE OUT
REXT	; EXT RESISTOR FOR OSC

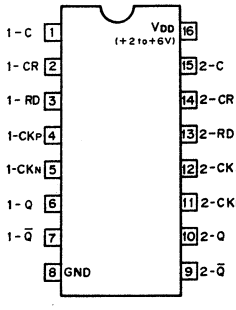
b3-b0 / b5-b4	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
00	A	B	C	D	E	F	G	H	I	J	K	L	M	·	␣	BLANK
01	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	:	■	(
10	0	1	2	3	4	5	6	7	8	9	?	!	’	.	BACK	)
11	↑	↓	←	→	+	−	*	/	=	&						

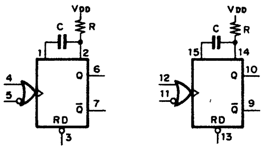
MC1496P (MOTOROLA)
BALANCED MODULATOR/DEMODULATOR
— TOP VIEW —


+SIG IN 1
GAIN ADJ 2
GAIN ADJ 3
-SIG IN 4
BIAS IN 5
+OUT 6
7 NC
VEE (-8V) 14
NC 13
12 -OUT
NC 11
10 -CAR IN
NC 9
8 +CAR IN

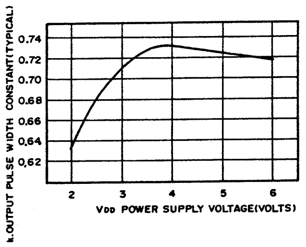

GAIN
+SIG
-SIG
+OUT
-OUT
+CAR
-CAR
BIAS

MC74HC4538N (MOTOROLA)
C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
— TOP VIEW —

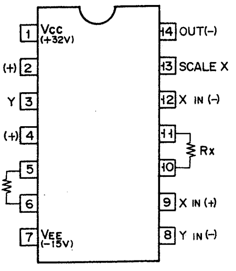

1-C 1
1-CR 2
1-RD 3
1-CKP 4
1-CKN 5
1-Q 6
1-Q̄ 7
8 GND
VDD (+2 to +6V) 16
15 2-C
14 2-CR
13 2-RD
12 2-CKP
11 2-CKN
10 2-Q
9 2-Q̄

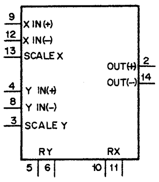


OUTPUT PULSE WIDTH= k·C·R



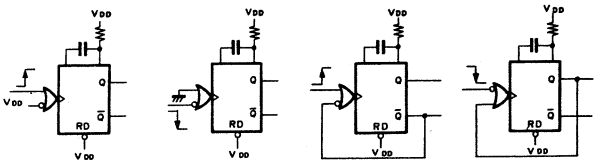
MC1595L (MOTOROLA)
LINEAR MULTIPLIER
— TOP VIEW —


1 VCC (+32V)
OUT (+) 2
SCALE Y 3
Y IN (+) 4
5
RY
6
7 VEE (-15V)
14 OUT(-)
13 SCALE X
12 X IN (-)
11
RX
10
9 X IN (+)
8 Y IN (-)

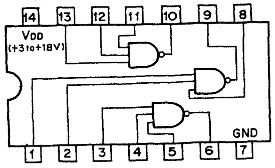

X IN(+)
X IN(-)
SCALE X
OUT(+)
OUT(-)
Y IN(+)
Y IN(-)
SCALE Y
RY
RX

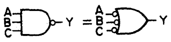
RETRIGGERABLE M.M.V

NON-RETRIGGERABLE M.M.V


VDD
Q
Q̄
RD
VDD

TC4023BF (TOSHIBA) FLAT PACKAGE
TC4023BP (TOSHIBA)
uPD4023BC (NEC)
C-MOS 3-INPUT NAND GATE
— TOP VIEW —


14
13
12
11
10
9
8
VDD
(+3to+18V)
GND
1
2
3
4
5
6
7

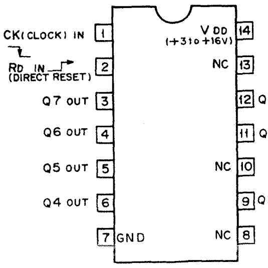


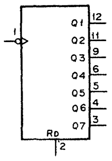
$Y = \overline{A \cdot B \cdot C} = \overline{A} + \overline{B} + \overline{C}$

A	B	C	Y
X	X	0	1
X	0	X	1
0	X	X	1
1	1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

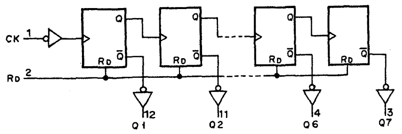
TC4024BP (TOSHIBA)
uPD4024BC (NEC)
C-MOS ASYNCHRONOUS 7-BIT BINARY COUNTER
— TOP VIEW —


CK(CLOCK) IN 1
RD IN (DIRECT RESET) 2
Q7 OUT 3
Q6 OUT 4
Q5 OUT 5
Q4 OUT 6
7 GND
V DD (+3to+16V) 14
NC 13
12 Q1 OUT
11 Q2 OUT
NC 10
9 Q3 OUT
NC 8

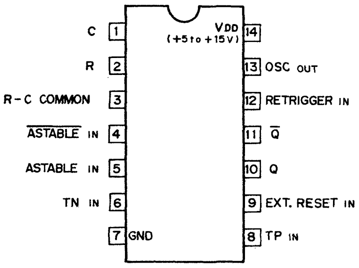

1
Q1 12
Q2 11
Q3 9
Q4 6
Q5 5
Q6 4
Q7 3
RD
2

COUNT	INPUTS		OUTPUTS						
	CK	RD	Q7	Q6	Q5	Q4	Q3	Q2	Q1
0	X	1	0	0	0	0	0	0	0
1	⌐L	0	0	0	0	0	0	0	1
2	⌐L	0	0	0	0	0	0	1	0
3	⌐L	0	0	0	0	0	0	1	1
4	⌐L	0	0	0	0	0	1	0	0
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
125	⌐L	0	1	1	1	1	1	0	1
126	⌐L	0	1	1	1	1	1	1	0
127	⌐L	0	1	1	1	1	1	1	1
—	0	0	NO CHANGE						
—	1	0							

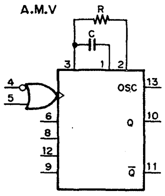
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE


CK 1
RD 2
Q
Q̄
RD
12
Q1
11
Q2
4
Q6
3
Q7

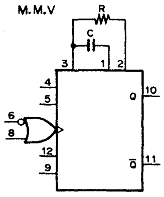
TC4047BP
****
TC4047BP (TOSHIBA)
C-MOS MONOSTABLE/ASTABLE MULTIVIBRATOR
— TOP VIEW —


C 1
R 2
R-C COMMON 3
ASTABLE IN 4
ASTABLE IN 5
TN IN 6
7 GND
VDD (+5to+15V) 14
13 OSC OUT
12 RETRIGGER IN
11 Q̄
10 Q
9 EXT. RESET IN
8 TP IN

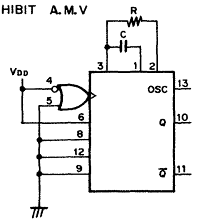
A.M.V


R
C
3
1
2
4
5
6
8
12
9
OSC
Q
Q̄
13
10
11

M.M.V

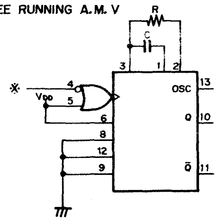

R
C
3
1
2
4
5
6
8
12
9
Q
Q̄
10
11

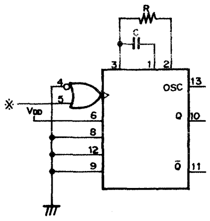
INHIBIT A.M.V


R
C
3
1
2
VDD
4
5
6
8
12
9
OSC
Q
Q̄
13
10
11

OUTPUTS PULSE WIDTH
Q, Q̄ ;CK= 4.40RC
OSC ;CK= 2.20RC

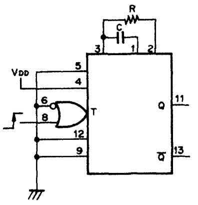
FREE RUNNING A.M.V

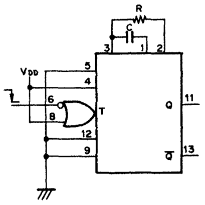

R
C
3
1
2
※
VDD
4
5
6
8
12
9
OSC
Q
Q̄
13
10
11

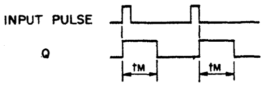

R
C
3
1
2
※
VDD
4
5
6
8
12
9
OSC
Q
Q̄
13
10
11

※ THE INPUT PULSE IS NOT CONCERNED WITH "H" AND "L"

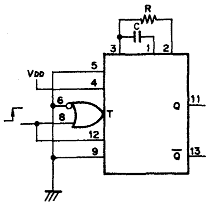
NON-RETRIGGERABLE M.M.V

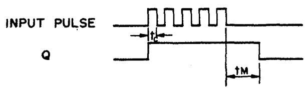

R
C
3
1
2
VDD
5
4
6
8
12
9
T
Q
Q̄
11
13


R
C
3
1
2
VDD
5
4
6
8
12
9
T
Q
Q̄
11
13


INPUT PULSE
Q
tM
tM

RETRIGGERABLE M.M.V


R
C
3
1
2
VDD
5
4
6
8
12
9
T
Q
Q̄
11
13

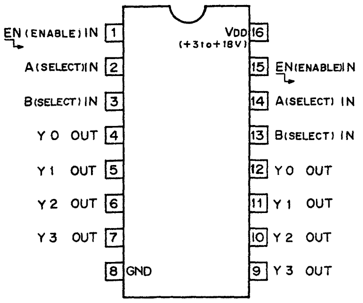

INPUT PULSE
Q
tc
tM

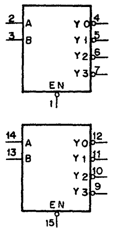
LAST CLOCK PULSE EDGE; FALL
(tc<tM)

OUTPUT PULSE WIDTH tM = 2.48RC

TC4556BP (TOSHIBA)

C-MOS BINARY TO 1-OF-4 DECODER/DEMULTIPLEXER
— TOP VIEW —


EN (ENABLE) IN 1
A (SELECT) IN 2
B (SELECT) IN 3
Y0 OUT 4
Y1 OUT 5
Y2 OUT 6
Y3 OUT 7
8 GND
VDD 16 (+3 to +18V)
15 EN (ENABLE) IN
14 A (SELECT) IN
13 B (SELECT) IN
12 Y0 OUT
11 Y1 OUT
10 Y2 OUT
9 Y3 OUT

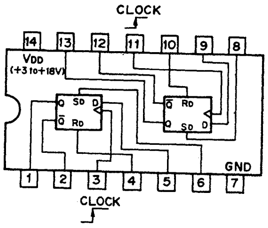

2 A
3 B
Y0 4
Y1 5
Y2 6
Y3 7
EN
1
14 A
13 B
Y0 12
Y1 11
Y2 10
Y3 9
EN
15

INPUTS			OUTPUTS			
EN	B	A	Y3	Y2	Y1	Y0
0	0	0	1	1	1	0
0	0	1	1	1	0	1
0	1	0	1	0	1	1
0	1	1	0	1	1	1
1	X	X	1	1	1	1

X ; DON'T CARE
1 ; HIGH LEVEL
0 ; LOW LEVEL

TC504013BF (TOSHIBA) FLAT PACKAGE

C-MOS D-TYPE FLIP FLOP WITH DIRECT SET/RESET
— TOP VIEW —


CLOCK
14 13 12 11 10 9 8
VDD (+3 to +18V)
Q SD D
Q̄ RD
Q̄ RD
Q SD D
GND
1 2 3 4 5 6 7
CLOCK

DIRECT R-S FLIP FLOP

SD	RD	Q	$\overline{Q}$
0	0	Qn	$\overline{Qn}$
0	1	0	1
1	0	1	0
1	1	0	1

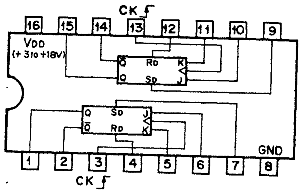
D-TYPE FLIP FLOP

CKn	CKn+1
D	Q
0	0
1	1

CLOCK CK; ⨍
CKn ; BEFORE CLOCK
CKn+1 ; AFTER CLOCK
0 ; LOW LEVEL
1 ; HIGH LEVEL

TC504027BP (TOSHIBA)

C-MOS J-K MASTER SLAVE FLIP-FLOP WITH DIRECT SET/RESET
— TOP VIEW —


CK
16 15 14 13 12 11 10 9
VDD (+3 to +18V)
Q̄ RD K
Q SD J
Q SD J
Q̄ RD K
GND
1 2 3 4 5 6 7 8
CK

DIRECT R-S FLIP FLOP

SD	RD	Q
0	0	Qn
0	1	0
1	0	1
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

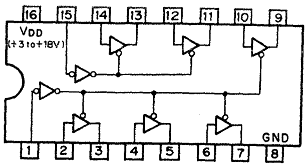
J-K FLIP FLOP

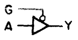
tn		tn+1
J	K	Q
0	0	Qn
0	1	0
1	0	1
1	1	$\overline{Qn}$

CK ; ⨍
tn ; BEFORE CLOCK
tn+1 ; AFTER CLOCK

TC5012BF (TOSHIBA) FLAT PACKAGE

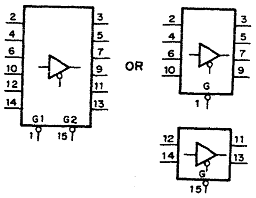
C-MOS NON-INVERTING 3-STATE BUFFER
— TOP VIEW —


16 15 14 13 12 11 10 9
VDD (+3 to +18V)
GND
1 2 3 4 5 6 7 8



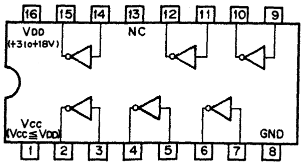
G	A	Y
0	0	0
0	1	1
1	X	HI-Z

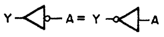
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE


2 3
4 5
6 7
10 9
12 11
14 13
G1 G2
1 15
OR
2 3
4 5
6 7
10 9
G
1
12 11
14 13
G
15

TC5020BP (TOSHIBA)

C-MOS LOW-TO-HIGH VOLTAGE TRANSLATION INVERTER
— TOP VIEW —


16 15 14 13 12 11 10 9
VDD (+3 to +18V)
NC
Vcc (Vcc ≦ VDD)
GND
1 2 3 4 5 6 7 8



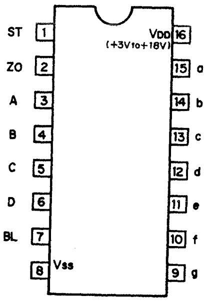
Y = $\overline{A}$

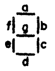
A	Y
0	1
1	0

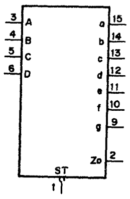
0 ; LOW LEVEL
1 ; HIGH LEVEL

TC5069BP (TOSHIBA)

C-MOS BCD-TO-SEVEN-SEGMENT LATCH/DECODER/DRIVER
— TOP VIEW —


ST 1
ZO 2
A 3
B 4
C 5
D 6
BL 7
8 Vss
VDD 16 (+3V to +18V)
15 a
14 b
13 c
12 d
11 e
10 f
9 g



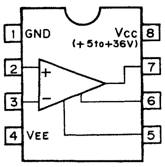

3 A
4 B
5 C
6 D
a 15
b 14
c 13
d 12
e 11
f 10
g 9
Zo 2
ST
1

ST ; STROBE IN
ZO ; ZERO OUT
BL ; BLANKING IN

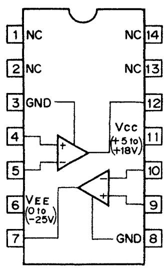
INPUT						OUTPUT (OPEN DRAIN)								DISPLAY	DECIMAL
ST	BL	D	C	B	A	a	b	c	d	e	f	g	ZERO OUT	(HEXADECIMAL)	
X	1	X	X	X	X	0	0	0	0	0	0	0	*	BLANK	
1	0	0	0	0	0	1	1	1	1	1	1	0	1	0	0
1	0	0	0	0	1	0	1	1	0	0	0	0	0	1	1
1	0	0	0	1	0	1	1	0	1	1	0	1	0	2	2
1	0	0	0	1	1	1	1	1	1	0	0	1	0	3	3
1	0	0	1	0	0	0	1	1	0	0	1	1	0	4	4
1	0	0	1	0	1	1	0	1	1	0	1	1	0	5	5
1	0	0	1	1	0	1	0	1	1	1	1	1	0	6	6
1	0	0	1	1	1	1	1	1	0	0	1	0	0	7	7
1	0	1	0	0	0	1	1	1	1	1	1	1	0	8	8
1	0	1	0	0	1	1	1	1	1	0	1	1	0	9	9
1	0	1	0	1	0	0	0	0	1	1	1	0	0	L	10
1	0	1	0	1	1	0	1	1	0	1	1	1	0	H	11
1	0	1	1	0	0	1	1	1	0	1	1	1	0	A	12
1	0	1	1	0	1	1	1	0	0	1	1	1	0	P	13
1	0	1	1	1	0	0	0	0	0	0	0	1	0	–	14
1	0	1	1	1	1	0	0	0	0	0	0	0	0	BLANK	15
0	0	X	X	X	X	★									

X ; DON'T CARE
✱ ; UNDETERMINED
★ ; DEPENS UPON THE BCD CODE PREVIOUSLY APPLIED WHEN ST="H"

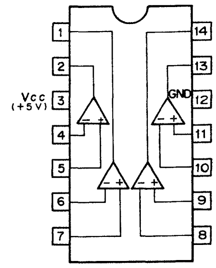
uPC311G2 (NEC) FLAT PACKAGE
VOLTAGE COMPARATOR
— TOP VIEW —


1 GND
Vcc 8
(+5to+36V)
2 +
3 −
7
6
4 VEE
5

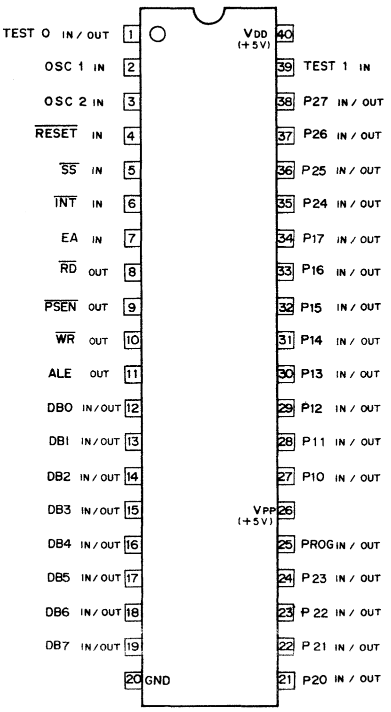
uPC319C (NEC)
DUAL VOLTAGE COMPARATOR
— TOP VIEW —


1 NC
NC 14
2 NC
NC 13
3 GND
12
4
Vcc (+5 to +18V) 11
5
10
6 VEE (0 to −25V)
9
7
GND 8

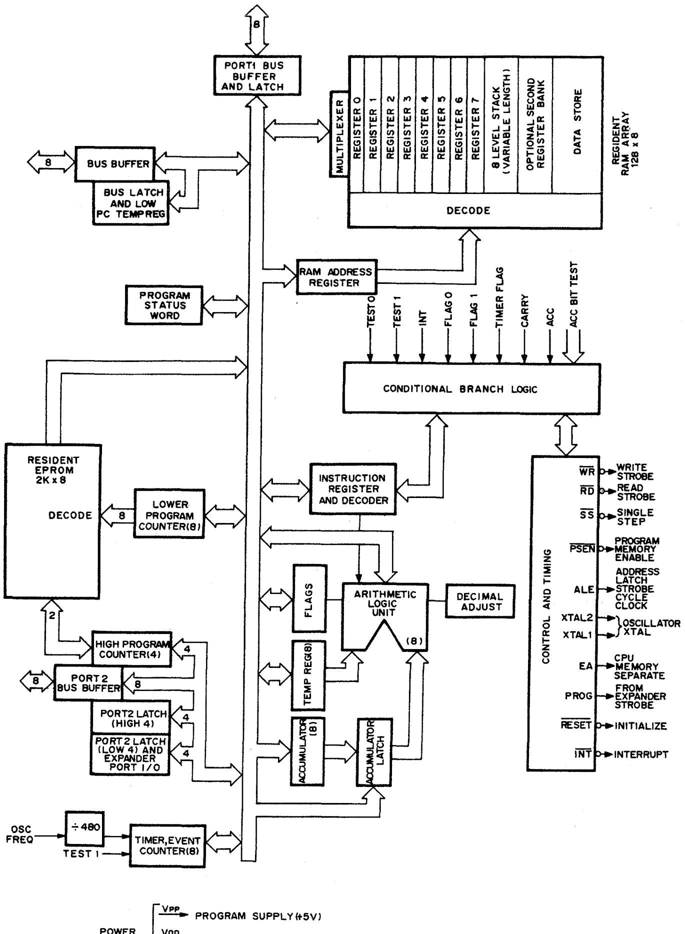
uPC339C (NEC)
COMPARATOR
— TOP VIEW —


1
2
Vcc (+5V) 3
4
5
6
7
14
13
GND 12
11
10
9
8

uPD8749HD (NEC)
N-MOS 8-BIT MICROPROCESSOR
— TOP VIEW —


TEST 0 IN / OUT 1
OSC 1 IN 2
OSC 2 IN 3
RESET IN 4
SS IN 5
INT IN 6
EA IN 7
RD OUT 8
PSEN OUT 9
WR OUT 10
ALE OUT 11
DB0 IN/OUT 12
DB1 IN/OUT 13
DB2 IN/OUT 14
DB3 IN/OUT 15
DB4 IN/OUT 16
DB5 IN/OUT 17
DB6 IN/OUT 18
DB7 IN/OUT 19
20 GND
VDD (+5V) 40
39 TEST 1 IN
38 P27 IN / OUT
37 P26 IN / OUT
36 P25 IN / OUT
35 P24 IN / OUT
34 P17 IN / OUT
33 P16 IN / OUT
32 P15 IN / OUT
31 P14 IN / OUT
30 P13 IN / OUT
29 P12 IN / OUT
28 P11 IN / OUT
27 P10 IN / OUT
VPP (+5V) 26
25 PROG IN / OUT
24 P23 IN / OUT
23 P22 IN / OUT
22 P21 IN / OUT
21 P20 IN / OUT

ALE; ADDRESS LATCH ENABLE
PSEN; PROGRAM STORE ENABLE
SS; SINGLE STEP
EA; EXTERNAL ACCESS
PROG; PROGRAM PULSE
RD; READ
WR; WRITE


8
PORT1 BUS BUFFER AND LATCH
8
BUS BUFFER
BUS LATCH AND LOW PC TEMP REG
MULTIPLEXER
REGISTER 0
REGISTER 1
REGISTER 2
REGISTER 3
REGISTER 4
REGISTER 5
REGISTER 6
REGISTER 7
8 LEVEL STACK (VARIABLE LENGTH)
OPTIONAL SECOND REGISTER BANK
DATA STORE
RESIDENT RAM ARRAY 128 x 8
DECODE
PROGRAM STATUS WORD
RAM ADDRESS REGISTER
TEST0
TEST 1
INT
FLAG 0
FLAG 1
TIMER FLAG
CARRY
ACC
ACC BIT TEST
CONDITIONAL BRANCH LOGIC
RESIDENT EPROM 2K x 8
DECODE
8
LOWER PROGRAM COUNTER(8)
INSTRUCTION REGISTER AND DECODER
2
HIGH PROGRAM COUNTER(4)
4
8
PORT 2 BUS BUFFER
8
PORT2 LATCH (HIGH 4)
4
PORT 2 LATCH (LOW 4) AND EXPANDER PORT I/O
4
FLAGS
TEMP REG(8)
ACCUMULATOR (8)
ACCUMULATOR LATCH
ARITHMETIC LOGIC UNIT
(8)
DECIMAL ADJUST
CONTROL AND TIMING
WR
WRITE STROBE
RD
READ STROBE
SS
SINGLE STEP
PSEN
PROGRAM MEMORY ENABLE
ALE
ADDRESS LATCH STROBE CYCLE CLOCK
XTAL2
XTAL1
OSCILLATOR XTAL
EA
CPU MEMORY SEPARATE
PROG
FROM EXPANDER STROBE
RESET
INITIALIZE
INT
INTERRUPT
OSC FREQ
÷480
TEST 1
TIMER, EVENT COUNTER(8)

POWER SUPPLY
VPP → PROGRAM SUPPLY(+5V)
VDD → +5V
GND → GND

SECTION 4
SPARE PARTS

4-1. PARTS INFORMATION

1. **Safety Related Component Warning**

   Components identified by shading marked with ⚠ on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose parts numbers appear as shown in this manual or in service bulletins and service manual supplements published by Sony.

2. Replacement Parts supplied from Sony Parts Center will sometimes have different shape and outside view from the parts which actually in use. This is due to "**accommodating the improved parts and/or engineering changes**" or "**standardization of genuine parts.**"

   - This manual's exploded views and electrical spare parts lists are indicating the parts numbers of "the standardized genuine parts at present".
   - Regarding engineering parts changes in our engineering department, refer Sony service bulletins and service manual supplements.

3. **Printed Components in Bold-Face type** on the exploded views and electrical spare parts list are normally stocked for replacement purposes. The remaining parts are not normally required for routine service work. Orders for parts not shown in Bold-Face type will be processed, but allow for additional delivery time.

4. Item with no part number and/or no description are not stocked because they are seldom required for routine service.

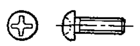
5. **Abbreviation**

REF. NO.	DESCRIPTION	REF. NO.	DESCRIPTION	REF. NO.	DESCRIPTION
BZ	BUZZER	F	FUSE	RV	VARIABLE RESISTOR
C	CAPACITOR	FL	FILTER	RY	RELAY
CN	CONNECTOR	IC	IC	S	SWITCH
CP	RESISTER BLOCK	L	INDUCTOR	T	TRANSFORMER
CV	VARIABLE CAPACITOR	PL	PILOT LAMP	TH	THERMISTOR
D	DIODE	Q	TRANSISTOR	X	OSCILLATOR
DL	DELAY LINE	R	RESISTOR		

All capacitors are in micro farads unless otherwise specified.
All inductors are in micro henries unless otherwise specified.
All resistors are in ohms.

4-2. SCREW

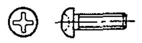
+B
Bzn-N



7-621-□□□-□□

SIZE	Parts No.
2 x 3	772-00
x 4	772-10
x 5	772-20
x 6	772-30
x 8	772-40
x 10	772-50
x 12	772-60
x 14	772-70
x 16	772-80
x 20	–
2.6 x 3	775-00
x 4	775-10
x 5	775-20
x 6	773-95
x 8	775-40
x 10	775-50
x 12	775-60
x 14	775-70
x 16	775-80
x 20	775-90

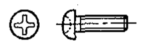
+B
Cr-N



7-621-□□□-□□

SIZE	Parts No.
2 x 3	772-08
x 4	772-18
x 5	771-06
x 6	772-38
x 8	772-48
x 10	772-58
x 12	772-68
x 14	772-78
x 16	772-88
x 20	–
2.6 x 3	775-08
x 4	773-86
x 5	770-87
x 6	770-67
x 8	770-99
x 10	773-87
x 12	775-68
x 14	775-78
x 16	775-88
x 20	773-91

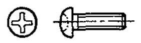
+B
Bzn-N



7-682-□□□-□□

SIZE	Parts No.
3 x 3	544-09
x 4	545-09
x 5	546-09
x 6	547-09
x 8	548-09
x 10	549-09
x 12	550-09
x 14	551-09
x 16	552-09
x 20	553-09
x 30	555-09
4 x 4	558-09
x 5	559-09
x 6	560-09
x 8	561-09
x 10	562-09
x 12	563-09
x 14	564-09
x 16	565-09
x 20	566-09

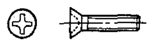
+B
Cr-N



7-682-□□□-□□

SIZE	Parts No.
3 x 3	544-04
x 4	545-04
x 5	546-04
x 6	547-04
x 8	548-04
x 10	549-04
x 12	550-04
x 14	551-04
x 16	552-04
x 20	553-04
4 x 4	558-04
x 5	559-04
x 6	560-04
x 8	561-04
x 10	562-04
x 12	563-04
x 14	564-04
x 16	565-04
x 20	566-04
5 x 8	574-04
x 10	575-04
x 12	576-04
x 14	577-04
x 16	578-04
x 20	579-04

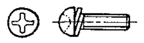
+K
Cr-N



7-682-□□□-□□

SIZE	Parts No.
3 x 4	245-04
x 5	246-04
x 6	247-04
x 8	248-04
x 10	249-04
x 12	250-04
x 14	251-04
x 16	252-04
x 20	253-04
4 x 6	260-04
x 8	261-04
x 10	262-04
x 12	263-04
x 14	264-04
x 16	265-04
x 20	266-04

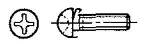
+PS
Czn-N



7-682-□□□-□□

SIZE	Parts No.
2 x 4	253-05
x 5	253-15
x 6	253-25
x 8	253-35
x 10	253-45
x 12	253-55
2.6 x 4	253-95
x 5	254-05
x 6	254-15
x 8	254-25
x 10	254-35
x 12	254-45
x 14	254-95
x 16	254-55
x 20	254-65
3 x 5	646-01
x 6	647-01
x 8	648-01
x 10	649-01
x 12	650-01
x 14	651-01
x 16	652-01
x 20	653-01
4 x 6	660-01
x 8	661-01
x 10	662-01
x 12	663-01
x 14	664-01
x 16	665-01
x 20	666-01

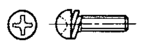
PRECISION +P
Bzn-N



7-627-□□□-□□

SIZE	Parts No.
1.7 x 1.6	552-18
x 1.8	–
x 2	552-28
x 2.2	–
x 2.5	552-08
x 2.8	–
x 3	552-38
x 3.5	552-78
x 4	552-48
x 4.5	–
x 5	552-58
x 5.5	–
x 6	–
2 x 1.8	554-38
x 2	553-18
x 2.2	–
x 2.5	553-28
x 2.8	554-58
x 3	553-38
x 3.5	554-18
x 4	553-48
x 4.5	553-58
x 5	–
x 5.5	–
x 6	553-68
x 7	553-88
x 8	553-98
x 10	553-78
2.6 x 2.8	556-08
x 3	–
x 3.5	556-28
x 4	556-38
x 4.5	556-48
x 5	556-58
x 5.5	–
x 6	556-78
x 7	–
x 8	–
x 9	–
x 10	–

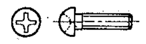
+PS
Bzn-N



7-682-□□□-□□

SIZE	Parts No.
2 x 4	253-00
x 5	253-10
x 6	253-20
x 8	253-30
x 10	253-40
x 12	253-50
2.6 x 4	253-90
x 5	254-00
x 6	254-10
x 8	254-20
x 10	254-30
x 12	254-40
x 14	254-90
x 16	254-50
x 20	254-60
3 x 5	646-09
x 6	647-09
x 8	648-09
x 10	649-09
x 12	650-09
x 14	651-09
x 16	652-09
x 20	–
4 x 6	–
x 8	–
x 10	–
x 12	–
x 14	–
x 16	–
x 20	–

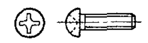
PRECISION +P
Cr-N



7-627-□□□-□□

SIZE	Parts No.
1.7 x 1.6	–
x 1.8	–
x 2	552-27
x 2.2	552-87
x 2.5	552-07
x 2.8	–
x 3	552-37
x 3.5	–
x 4	552-47
x 4.5	552-67
x 5	552-57
x 5.5	557-07
x 6	552-77
2 x 1.8	554-37
x 2	553-17
x 2.2	554-07
x 2.5	553-27
x 2.8	–
x 3	553-37
x 3.5	554-17
x 4	553-47
x 4.5	553-57
x 5	553-67
x 5.5	–
x 6	554-27
x 7	553-87
x 8	553-97
x 10	553-77
2.6 x 2.8	556-07
x 3	–
x 3.5	–
x 4	556-37
x 4.5	–
x 5	–
x 5.5	–
x 6	556-77
x 7	–
x 8	556-97
x 9	–
x 10	557-47

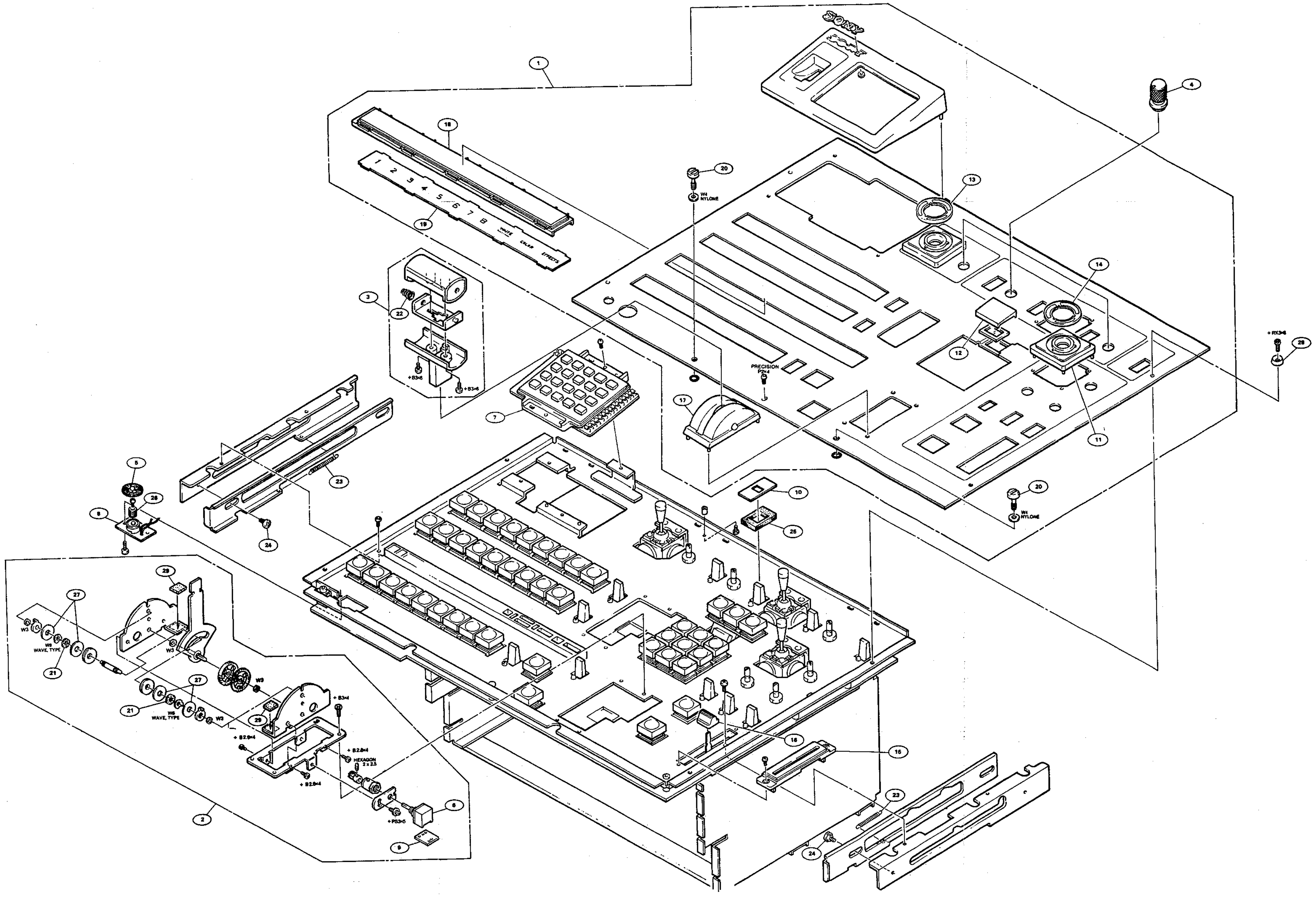
+P
Czn-N



7-682-□□□-□□

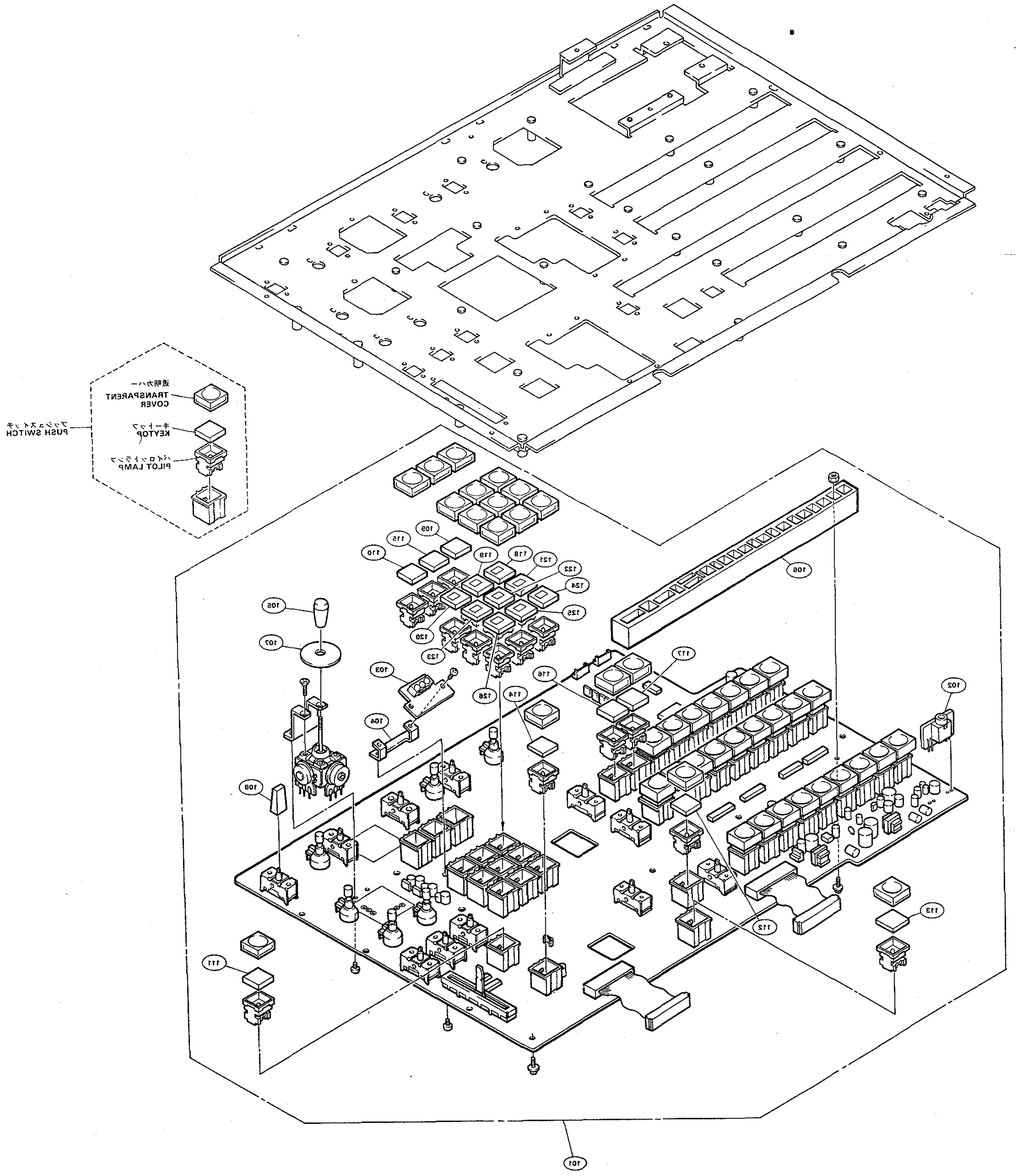
SIZE	Parts No.
3 x 3	144-01
x 4	145-01
x 5	146-01
x 6	147-01
x 8	148-01
x 10	149-01
x 12	150-01
x 14	151-01
x 16	152-01
4 x 4	158-01
x 5	159-01
x 6	160-01
x 8	161-01
x 10	162-01
x 12	163-01
x 14	164-01
x 16	165-01
x 20	166-01

4-3. EXPLODED VIEW
CONTROL PANEL ASSY


1
SONY
4
13
18
19
20
W4 NYLONE
3
22
+B3×5
+B3×4
14
12
11
7
17
PRECISION P2×4
28
+RK3×6
10
25
20
W4 NYLONE
5
26
8
23
24
29
27
W3
W6 WAVE, TYPE
21
27
21
W6 WAVE, TYPE
W3
29
+B3×4
+B2.6×4
+B2.6×4
HEXAGON 2×2.5
+B2.6×4
+PS3×5
6
2
9
16
16
23
24

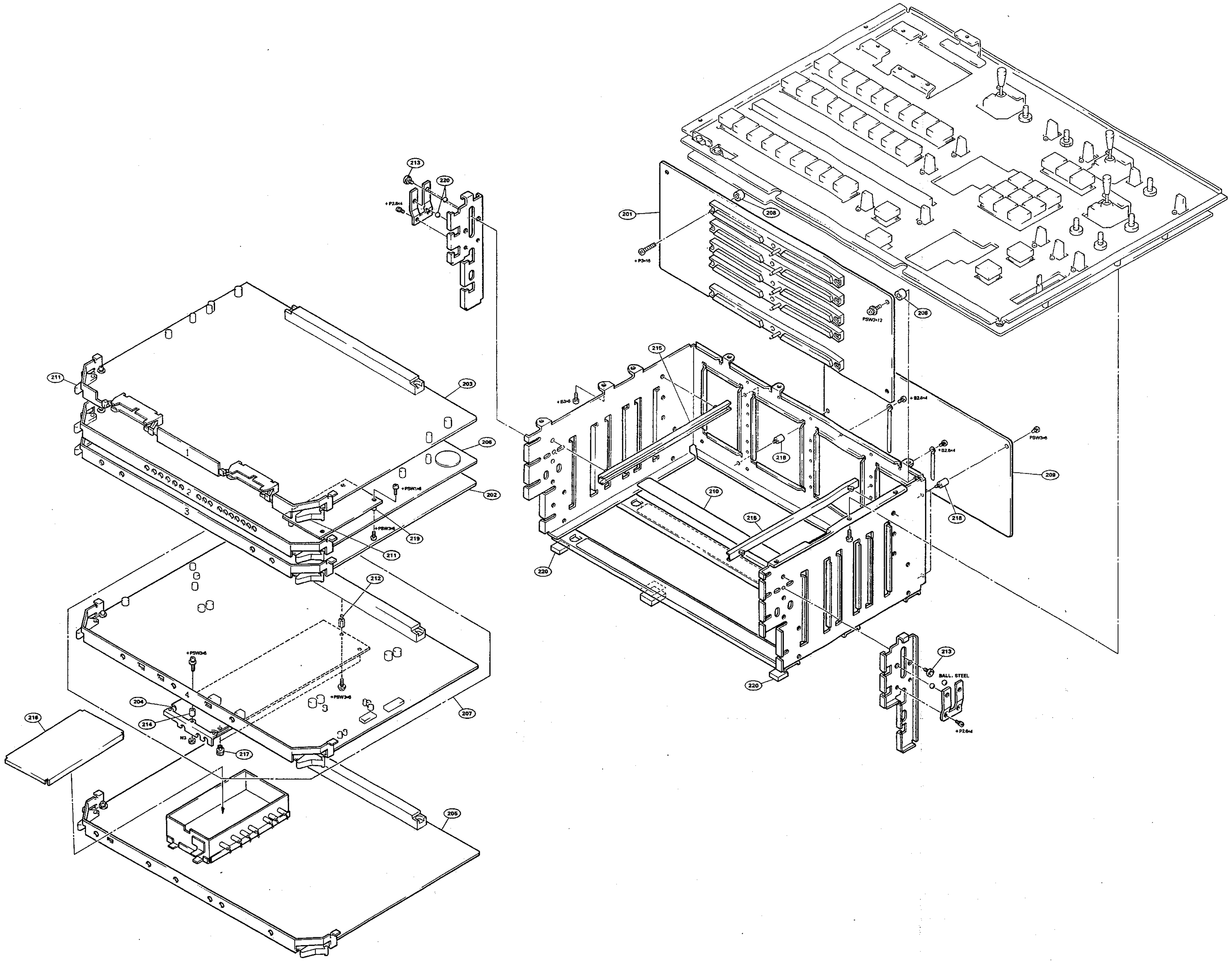
No.	Parts No.	Description
1	A-7605-065-B	PANEL ASSY, CONTROL
2	**A-7612-269-B**	**FADER ASSY**
3	A-7612-270-A	KNOB ASSY, LEVER
4	**X-2112-801-1**	**KNOB ASSY, VOL**
5	**X-2112-802-1**	**KNOB ASSY, VR**
6	**1-237-127-11**	**CARBON 5K (RV1)**
7	**1-464-595-11**	**KEY BOARD UNIT**
8	1-617-823-12	PRINTED CIRCUIT BOARD "VR-25"
9	1-617-831-11	PRINTED CIRCUIT BOARD "VR-26"
10	2-112-802-01	PLATE, SW, LEVER
11	2-112-803-01	COVER, JOYSTICK
12	2-112-804-01	COVER, LAMP
13	2-112-806-01	RING, COLOR
14	2-112-806-11	RING, COLOR
15	2-112-808-01	ESCUTCHEON, VR
16	**2-112-812-01**	**KNOB, VR, SLIDE**
17	2-112-841-01	COVER, LEVER
18	2-112-842-01	COVER, INDICATOR
19	2-112-843-02	FILM, INDICATE
20	**2-112-879-01**	**SCREW, COIN**
21	2-112-899-01	SPACER, RUBBER
22	**3-545-695-01**	**SPRING**
23	**3-583-501-04**	**SPRING, TENSION**
24	3-613-164-03	SHAFT, STEP
25	3-670-535-01	PACKING
26	3-676-088-01	SHAFT, KNOB
27	**3-701-441-21**	**WASHER**
28	**3-703-224-01**	**WASHER (3 DIA.) ORNAMENTAL**
29	9-911-838-XX	CUSHION, STAY

CHASSIS ASSY (1)



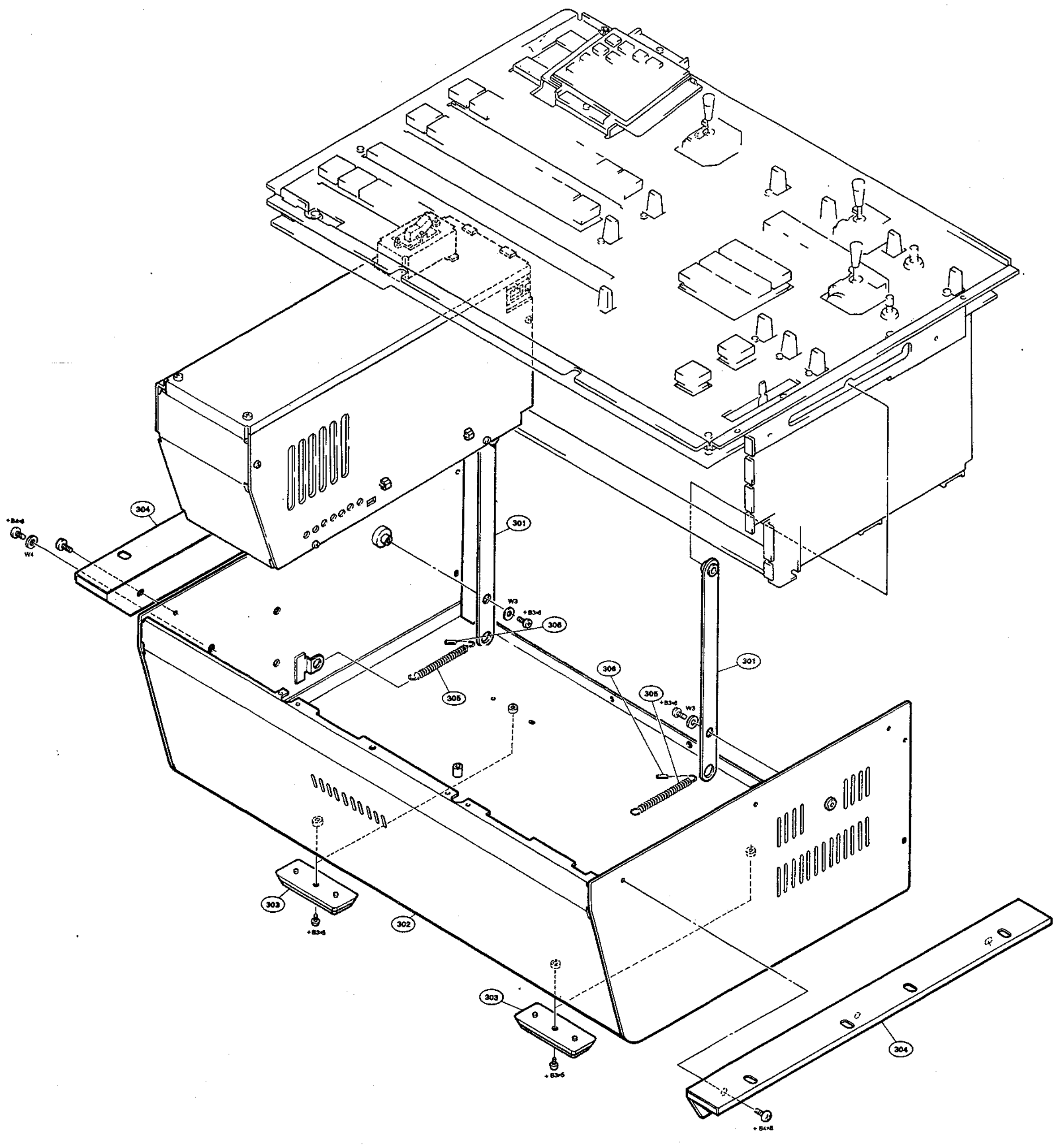
No.	Parts No.	Description
101	A-7513-565-A	MOUNTED CIRCUIT BOARD "KY-123"
102	1-617-821-11	PRINTED CIRCUIT BOARD "JK-15"
103	1-622-186-11	PRINTED CIRCUIT BOARD "LP-37"
104	2-112-807-01	BRACKET, PC, BOARD
105	**2-112-813-01**	**KNOB, JOYSTICK**
106	2-112-850-01	HOLDER, MULTILAMP
107	2-112-869-11	WASHER, POLY-SLIDER
108	**2-252-620-00**	**KNOB, LEVER SWITCH**
109	**1-570-515-11**	**PUSH, SWITCH**
	1-518-450-31	**PILOT LAMP**
	3-707-233-01	**KEY TOP "MIX"**
	3-707-232-01	**COVER, TRANSPARENT**
110	**1-570-515-21**	**PUSH, SWITCH (S40)**
	1-518-450-31	**PILOT LAMP**
	3-707-232-01	**COVER, TRANSPARENT**
	3-707-233-11	**KEY TOP "EXT KEY"**
111	**1-570-515-31**	**PUSH, SWITCH (S42)**
	1-518-450-31	**PILOT LAMP**
	3-707-232-01	**COVER, TRANSPARENT**
	3-707-233-21	**KEY TOP "PST"**
112	**1-570-515-41**	**PUSH, SWITCH (S43)**
	1-518-450-31	**PILOT LAMP**
	3-707-232-01	**COVER, TRANSPARENT**
	3-707-233-31	**KEY TOP "PGM"**
113	**1-570-515-51**	**PUSH, SWITCH (S41)**
	1-518-450-31	**PILOT LAMP**
	3-707-232-01	**COVER, TRANSPARENT**
	3-707-233-41	**KEY TOP "TAKE"**
114	**1-570-515-61**	**PUSH, SWITCH (S35,S28)**
	1-518-450-31	**PILOT LAMP**
	3-707-232-01	**COVER, TRANSPARENT**
	3-707-233-51	**KEY TOP "EFF"**
115	**1-570-515-71**	**PUSH, SWITCH (S39)**
	1-518-450-31	**PILOT LAMP**
	3-707-232-01	**COVER, TRANSPARENT**
	3-707-233-61	**KEY TOP "WIPE SHIFT"**
116	**1-570-515-81**	**PUSH, SWITCH A BUS(S9)/B BUS(S18)/PST(S27)**
	1-518-450-31	**PILOT LAMP**
	3-707-232-01	**COVER, TRANSPARENT**
	3-707-233-71	**KEY TOP "BACK GROUND"**
117	**1-570-515-91**	**PUSH, SWITCH**
	1-518-450-31	**PILOT LAMP**
	3-707-232-01	**COVER, TRANSPARENT**
	3-707-234-01	**KEY TOP "◲"**
118	**1-570-516-91**	**PUSH, SWITCH A BUS(S10 S17)/B BUS(S1 S8)/PST(S19 S26)**
	1-518-450-31	**PILOT LAMP**
	3-707-232-01	**COVER, TRANSPARENT**
	3-707-049-01	**KEY TOP "□"**
119	**1-570-516-11**	**PUSH, SWITCH (S30)**
	1-518-450-31	**PILOT LAMP**
	3-707-232-01	**COVER, TRANSPARENT**
	3-707-234-11	**KEY TOP "◱"**
120	**1-570-516-21**	**PUSH, SWITCH (S31)**
	1-518-450-31	**PILOT LAMP**
	3-707-232-01	**COVER, TRANSPARENT**
	3-707-234-21	**KEY TOP "◧"**
121	**1-570-516-31**	**PUSH, SWITCH (S32)**
	1-518-450-31	**PILOT LAMP**
	3-707-232-01	**COVER, TRANSPARENT**
	3-707-234-31	**KEY TOP "◳"**
122	**1-570-516-41**	**PUSH, SWITCH (S33)**
	1-518-450-31	**PILOT LAMP**
	3-707-232-01	**COVER, TRANSPARENT**
	3-707-234-41	**KEY TOP "◰"**
123	**1-570-516-51**	**PUSH, SWITCH (S34)**
	1-518-450-31	**PILOT LAMP**
	3-707-232-01	**COVER, TRANSPARENT**
	3-707-234-51	**KEY TOP "⬒"**
124	**1-570-516-61**	**PUSH, SWITCH (S35)**
	1-518-450-31	**PILOT LAMP**
	3-707-232-01	**COVER, TRANSPARENT**
	3-707-234-61	**KEY TOP "▣"**
125	**1-570-516-71**	**PUSH, SWITCH (S36)**
	1-518-450-31	**PILOT LAMP**
	3-707-232-01	**COVER, TRANSPARENT**
	3-707-234-71	**KEY TOP "◈"**
126	**1-570-516-71**	**PUSH, SWITCH (S37)**
	1-518-450-31	**PILOT LAMP**
	3-707-232-01	**COVER, TRANSPARENT**
	3-707-234-81	**KEY TOP "⊡"**

CHASSIS ASSY (2)



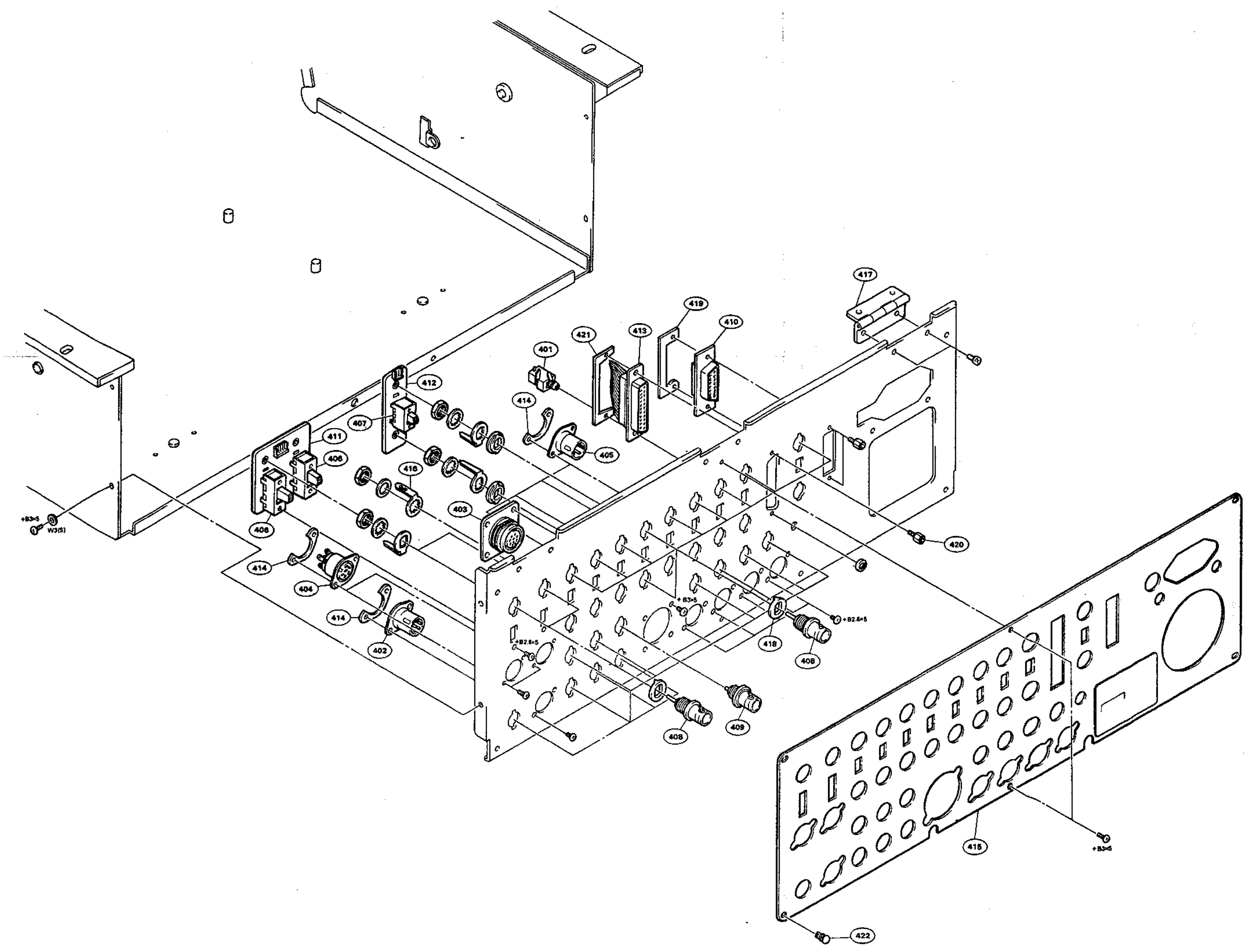
No.	Parts No.	Description
201	A-7513-358-B	MOUNTED CIRCUIT BOARD "HN-31"
202	A-7513-364-A	MOUNTED CIRCUIT BOARD "EF-13" (FOR UC, J, BR)
	A-7513-365-A	MOUNTED CIRCUIT BOARD "EF-13" (FOR EK)
203	A-7513-564-A	MOUNTED CIRCUIT BOARD "SY-118" (FOR UC, J, BR)
	A-7513-571-A	MOUNTED CIRCUIT BOARD "SY-118" (FOR EK)
204	A-7513-570-A	MOUNTED CIRCUIT BOARD "WP-21" (FOR UC, J, BR)
	A-7513-577-A	MOUNTED CIRCUIT BOARD "WP-21" (FOR EK)
205	A-7615-203-A	SD-17 ASSY (FOR UC, J)
	A-7513-567-A	MOUNTED CIRCUIT BOARD "SG-125" (FOR UC, J)
	A-7615-206-A	SD-17 ASSY (FOR EK)
	A-7513-574-A	MOUNTED CIRCUIT BOARD "SG-125" (FOR EK)
	A-7615-209-A	SD-17 ASSY (FOR BR)
	A-7513-579-A	MOUNTED CIRCUIT BOARD "SG-125" (FOR BR)
206	A-7615-204-A	SY-41A ASSY (FOR UC, J, BR)
	A-7513-362-A	MOUNTED CIRCUIT BOARD "SY-52" (FOR UC, J, BR)
	A-7615-207-A	SY-41A ASSY (FOR EK)
	A-7513-363-A	MOUNTED CIRCUIT BOARD "SY-52" (FOR EK)
207	A-7615-205-A	WP-20 ASSY (FOR UC, J, BR)
	A-7615-208-A	WP-20 ASSY (FOR EK)
208	2-112-809-01	SPACER, PC BOARD
209	2-112-814-01	GUARD
210	2-112-895-01	SHEET, INSULATING
211	**2-251-622-00**	**LEVER, PC BOARD**
212	3-157-917-01	SUPPORT (B), PC BOARD
213	3-613-164-03	SHAFT, STEP
214	**3-650-528-01**	**SPACER (5 x 6)**
215	3-673-676-21	RAIL, PC BOARD GUIDE
216	3-680-646-03	LID, SG SHIELD
217	**4-812-134-01**	**RIVET NYLON,3.5**
218	4-886-542-01	SUPPORT
219	**4-907-937-01**	**SUPPORT (A)**
220	**9-911-845-XX**	**CUSHION**

CABINET ASSY


301
301
302
303
303
304
304
305
305
306
306
W3
+B3×6

No.	Parts No.	Description
301	X-2112-803-1	STAY ASSY
302	X-2112-806-2	CABINET ASSY
303	**X-3565-417-1**	**LEG ASSY**
304	2-112-826-01	ANGLE, RACK FITTING
305	**3-621-061-01**	**SPRING (A)**
306	4-866-397-12	CUSHION, LED

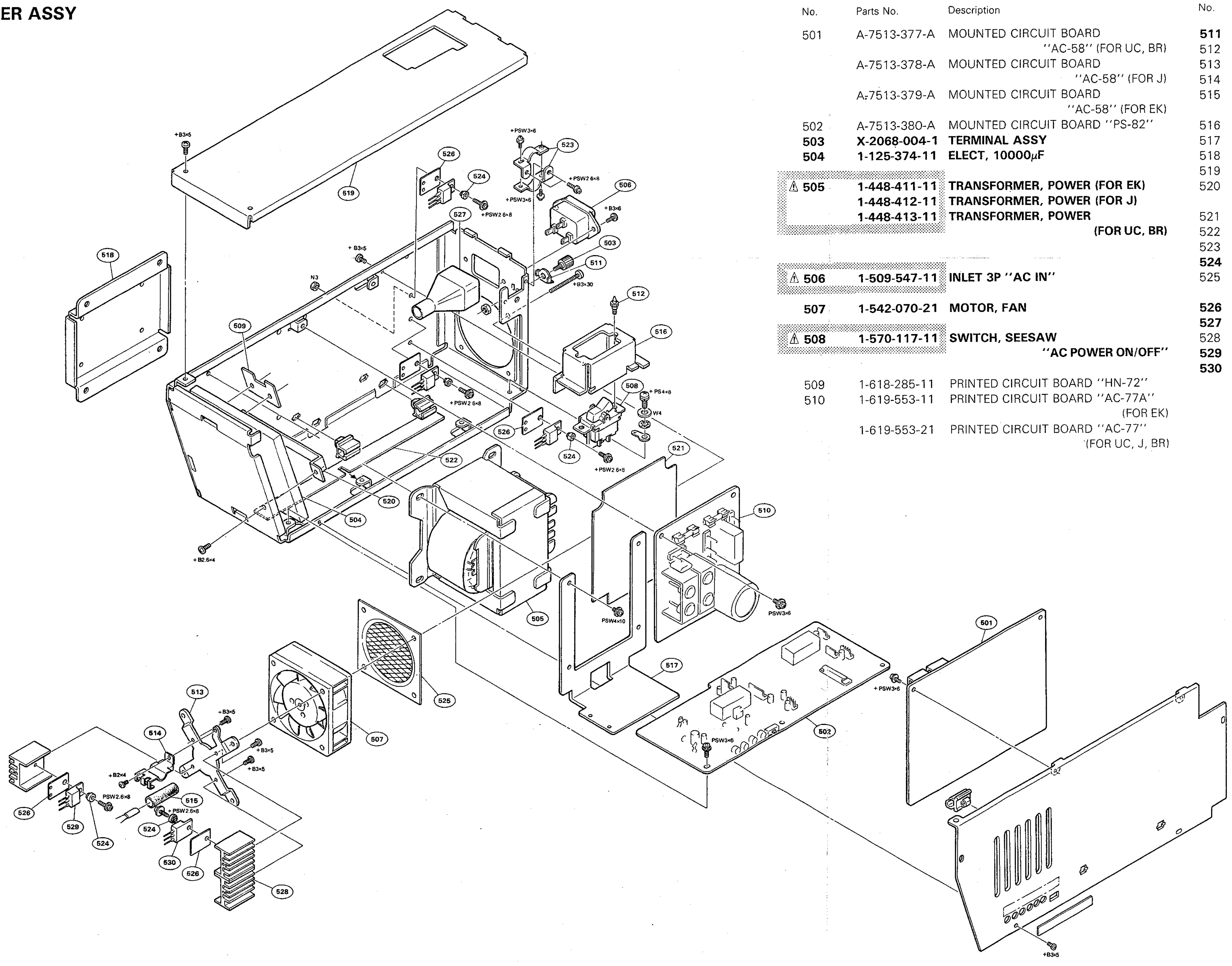
REAR PANEL ASSY


401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
+B3×6

No.	Parts No.	Description
401	**1-507-195-21**	**SPECIAL REMOTE CONTROL JACK "TRIGGER"**
402	**1-508-055-00**	**RECEPTACLE, 6P MALE "EXT WIPE IN"**
403	**1-508-382-15**	**RECEPTACLE, 10P FEMALE "TALLY/INCOM"**
404	**1-509-422-13**	**RECEPTACLE, 6P FEMALE "EXT KEY" "DSK KEY"**
405	**1-509-501-00**	**RECEPTACLE, 4P MALE "TALLY/INTERCOM"**
406	**1-516-576-00**	**SWITCH, SLIDE "DSK KEY" "EXT KEY"**
407	**1-554-972-11**	**SWITCH, SLIDE "VIDEO IN 1 ~ 8"**
408	**1-561-336-11**	**RECEPTACLE, BNC**
409	**1-561-781-11**	**RECEPTACLE, BNC**
410	1-562-861-11	RECEPTACLE, 15P

No.	Parts No.	Description
411	1-617-828-12	PRINTED CIRCUIT BOARD "SW-100"
412	1-617-836-12	PRINTED CIRCUIT BOARD "SW-94"
413	1-937-095-13	HARNESS (HN) WITH 25P, RECEPTACLE
	1-506-510-21	RECEPTACLE, 25P
414	**2-070-339-02**	**NUT, PLATE**
415	2-112-856-11	PANEL, ORNAMENTAL
416	2-286-707-00	LUG, BNC
417	3-651-803-01	HINGE, PC BOARD
418	**3-654-545-01**	**SPACER, BNC**
419	**3-659-858-11**	**NUT (D-15), LEAF**
420	**4-603-275-01**	**LOCK, SCREW**
421	4-604-023-01	NUT (D SUB), PLATE
422	**4-812-134-01**	**RIVET NYLON, 3.5**

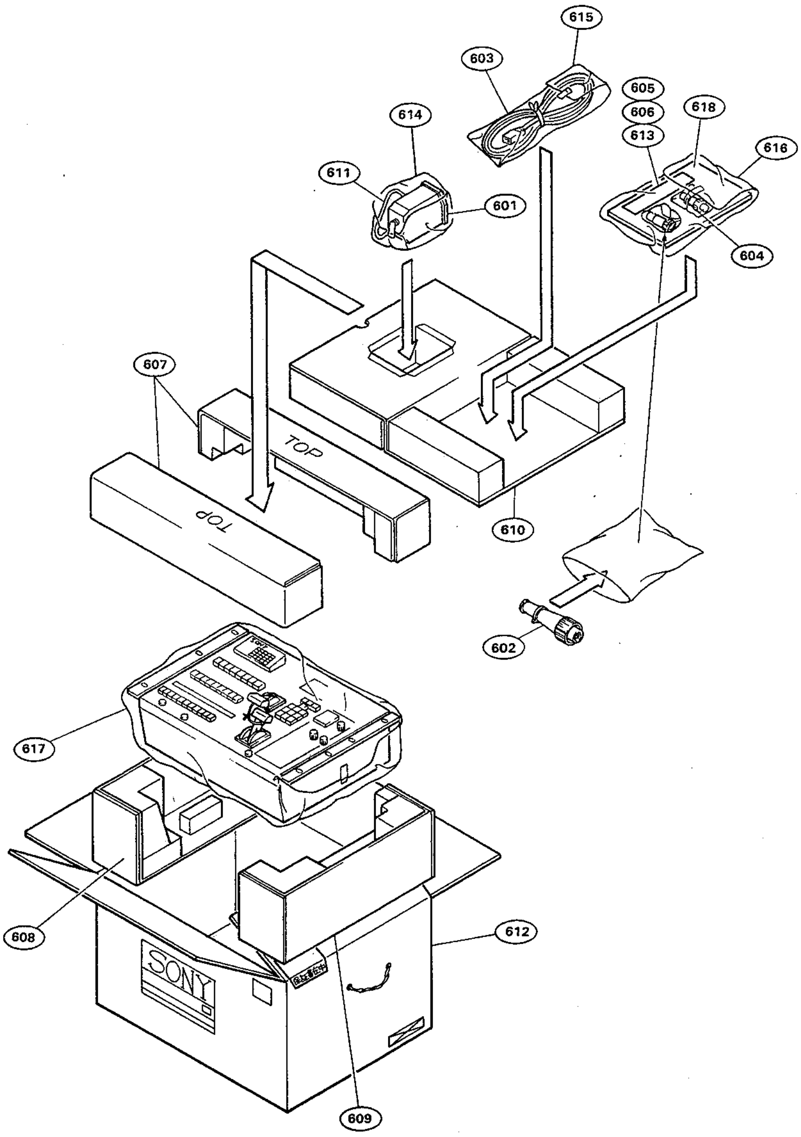
POWER ASSY


+B3×5
519
518
+PSW3×6
523
526
524
+PSW2.6×8
+PSW3×6
506
+B3×6
527
+PSW2.6×8
503
+B3×5
N3
511
+B3×30
512
509
516
508
+PS4×8
W4
+PSW2.6×8
526
524
+PSW2.6×8
521
522
520
504
+B2.6×4
510
PSW3×6
505
PSW4×10
501
517
+PSW3×6
502
PSW3×6
525
507
513
+B3×5
514
+B3×5
+B3×5
+B2×4
PSW2.6×8
515
+PSW2.6×8
526
529
524
524
530
526
528
+B3×5

No.	Parts No.	Description
501	A-7513-377-A	MOUNTED CIRCUIT BOARD "AC-58" (FOR UC, BR)
	A-7513-378-A	MOUNTED CIRCUIT BOARD "AC-58" (FOR J)
	A-7513-379-A	MOUNTED CIRCUIT BOARD "AC-58" (FOR EK)
502	A-7513-380-A	MOUNTED CIRCUIT BOARD "PS-82"
503	**X-2068-004-1**	**TERMINAL ASSY**
504	**1-125-374-11**	**ELECT, 10000μF**
⚠ **505**	**1-448-411-11**	**TRANSFORMER, POWER (FOR EK)**
	1-448-412-11	**TRANSFORMER, POWER (FOR J)**
	1-448-413-11	**TRANSFORMER, POWER (FOR UC, BR)**
⚠ **506**	**1-509-547-11**	**INLET 3P "AC IN"**
507	**1-542-070-21**	**MOTOR, FAN**
⚠ **508**	**1-570-117-11**	**SWITCH, SEESAW "AC POWER ON/OFF"**
509	1-618-285-11	PRINTED CIRCUIT BOARD "HN-72"
510	1-619-553-11	PRINTED CIRCUIT BOARD "AC-77A" (FOR EK)
	1-619-553-21	PRINTED CIRCUIT BOARD "AC-77" (FOR UC, J, BR)

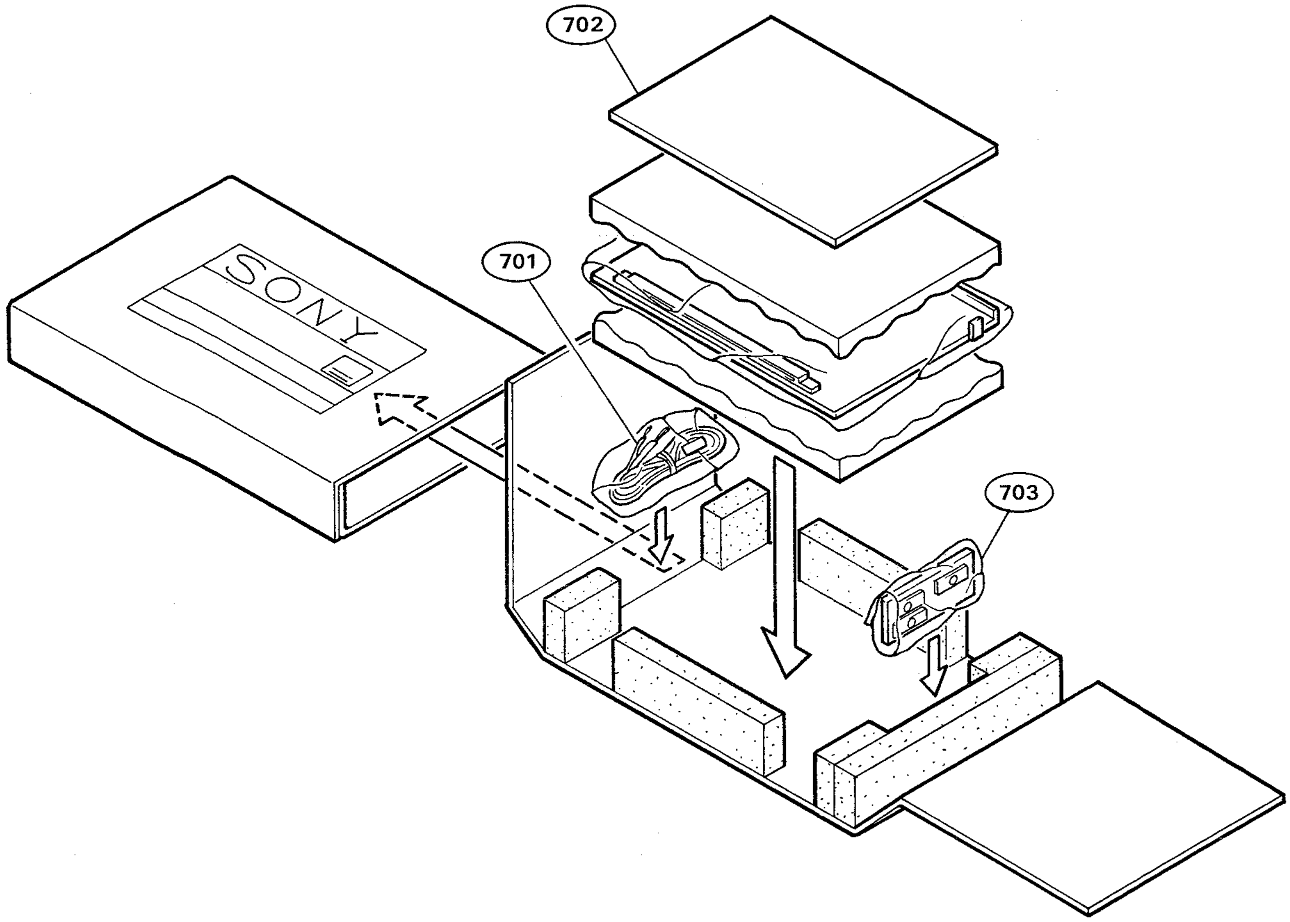
No.	Parts No.	Description
511	**2-068-008-01**	**WASHER**
512	2-112-819-01	PIN
513	2-112-820-01	BRACKET, HEAT SINK
514	2-112-823-01	SPRING
515	2-112-824-01	TUBE, POLISHING RUBBER
516	2-112-851-02	HOLDER, POWER SW
517	2-112-852-01	HOLDER, TRANSFORMER
518	2-112-853-01	RETAINER, POWER UNIT
519	2-112-866-01	CHASSIS (UPPER), POWER
520	2-112-872-02	RETAINER, CAPACITOR
521	2-121-101-01	SHEET (E), INSULATING
522	2-121-102-01	SHEET (D), INSULATING
523	2-121-103-01	CLAMP, CORD
524	**2-832-007-03**	**BUSHING (K), INSULATING**
525	3-675-898-03	PLATE, VENTILATION
526	**3-703-037-11**	**INSULATOR, TO-220**
527	**4-601-466-11**	**COVER, 3P INLET**
528	4-863-132-31	HEAT SINK (SMALL)
529	**8-729-315-63**	**TRANSISTOR 2SB856 (Q3)**
530	**8-729-831-33**	**TRANSISTOR 2SD313 HP (Q1, Q2)**

PACKING MATERIAL & ACC.



No.	Parts No.	Description
601	A-7401-142-A	CARD ASSY, INSTRUCTION
602	**1-508-171-16**	**PLUG, 10P**
603	**1-534-754-15**	**CORD, POWER (FOR J)**
	1-551-812-11	**CORD, POWER (FOR UC, BR)**
	1-556-760-11	**CORD, POWER (FOR EK)**
604	1-564-592-11	PLUG, 15P
605	2-112-855-01	CHIP, SWITCH
606	2-112-855-11	CHIP, SWITCH
607	2-112-888-01	CUSHION, UPPER
608	2-112-889-01	CUSHION (LEFT), LOWER
609	2-112-890-01	CUSHION (RIGHT), LOWER
610	2-112-891-01	BOARD, TOP

No.	Parts No.	Description
611	2-112-896-01	TUBE, RUBBER
612	2-119-606-01	INDIVIDUAL CARTON (FOR EK)
	2-119-607-01	INDIVIDUAL CARTON (FOR BR)
	2-119-610-01	INDIVIDUAL CARTON (FOR UC, J)
613	2-119-612-01	LABEL
614	**3-701-627-01**	**BAG, POLYETHYLENE (FOR CARD)**
615	**3-701-629-01**	**BAG, POLYETHYLENE (FOR CORD, POWER)**
616	**3-701-630-01**	**BAG, POLYETHYLENE (FOR MANUAL)**
617	**3-701-641-02**	**BAG, POLYETHYLENE (FOR SEG-2550A/AP/APM)**
618	**3-769-078-01**	**MANUAL, INSTRUCTION (FOR J)**
	3-769-078-11	**MANUAL, INSTRUCTION (FOR UC, EK, BR)**
	3-769-078-31	**MANUAL, INSTRUCTION (FOR UC, EK)**
	3-769-078-41	**MANUAL, INSTRUCTION (FOR EK)**
	3-769-078-51	**MANUAL, INSTRUCTION (FOR EK)**



No.	Part No.	Description
701	**1-534-588-00**	**CORD, WITH PLUG**
702	**3-769-168-01**	**MANUAL, INSTRUCTION**
703		

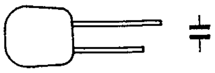
4-4. ELECTRICAL PARTS LIST

Parts that are not listed in the "reference numbers order list" are shown in following table.
Reference numbers are omitted.

CAPACITOR

SILVERED MICA CAPACITOR

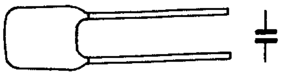
1 pF through 620 pF
± 5%, 50WV



Parts No. 1-107-□□□-00

Value	Parts No. -□□□-	Value	Parts No. -□□□-	Value	Parts No. -□□□-	Value	Parts No. -□□□-
1 pF	098	15 pF	065	51 pF	078	180 pF	091
2	099	16	066	56	079	200	092
3	100	18	067	62	080	220	093
4	101	20	068	68	081	240	094
5	102	22	069	75	082	270	095
6	103	24	070	82	083	300	096
7	104	27	071	91	084	330	097
8	105	30	072	100	085	360	231
9	106	33	073	110	086	390	232
10	061	36	074	120	087	430	233
11	062	39	075	130	088	470	234
12	063	43	076	150	089	510	235
13	064	47	077	160	090	560	236
						620	237

MYLAR CAPACITOR



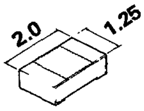
0.00047μF through 0.22μF
±5% 50WV

Parts No. 1-130-□□□-00

Value	Parts No. —□□□—	Value	Parts No. —□□□—	Value	Parts No. —□□□—
0.00047μF	467	0.0039μF	478	0.033μF	489
0.00056	468	0.0047	479	0.039	490
0.00068	469	0.0056	480	0.047	491
0.00082	470	0.0068	481	0.056	492
0.001	471	0.0082	482	0.068	493
0.0012	472	0.01	483	0.082	494
0.0015	473	0.012	484	0.1	495
0.0018	474	0.015	485	0.12	496
0.0022	475	0.018	486	0.15	497
0.0027	476	0.022	487	0.18	498
0.0033	477	0.027	488	0.22	499

R, CHIP

CHIP RESISTOR



±5% 1/10W
0Ω through 3.3MΩ

Parts No. 1-216-□□□-00

Value	Parts No. — □□□ —
0Ω	295
1Ω	—
1.1	—
1.2	—
1.3	—
1.5	—
1.6	—
1.8	—
2	—
2.2	298
2.4	301
2.7	302
3	303
3.3	304
3.6	305
3.9	306
4.3	307
4.7	308
5.1	297
5.6	309
6.2	310
6.8	311
7.5	312
8.2	313
9.1	314
10Ω	001
11	002
12	003
13	004
15	005
16	006
18	007
20	008
22	009
24	010
27	011

Value	Parts No. — □□□ —
30	012
33Ω	013
36	014
39	015
43	016
47	017
51	018
56	019
62	020
68	021
75	022
82	023
91	024
100Ω	025
110	026
120	027
130	028
150	029
160	030
180	031
200	032
220	033
240	034
270	035
300	036
330	037
360	038
390	039
430	040
470	041
510	042
560	043
620	044
680	045
750	046
820	047

Value	Parts No. — □□□ —
910	048
1kΩ	049
1.1	050
1.2	051
1.3	052
1.5	053
1.6	054
1.8	055
2	056
2.2	057
2.4	058
2.7	059
3	060
3.3	061
3.6	062
3.9	063
4.3	064
4.7	065
5.1	066
5.6	067
6.2	068
6.8	069
7.5	070
8.2	071
9.1	072
10kΩ	073
11	074
12	075
13	076
15	077
16	078
18	079
20	080
22	081
24	082
27	083

Value	Parts No. — □□□ —
30	084
33kΩ	085
36	086
39	087
43	088
47	089
51	090
56	091
62	092
68	093
75	094
82	095
91	096
100kΩ	097
110	098
120	099
130	100
150	101
160	102
180	103
200	104
220	105
240kΩ	106
270	107
300	108
330	109
360	110
390	111
430	112
470	113
510	114
560	115
620	116
680	117
750	118
820	119

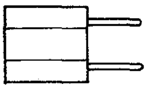
Value	Parts No. — □□□ —
910	120
1MΩ	121
1.1	122
1.2	123
1.3	124
1.5	125
1.6	126
1.8	127
2	128
2.2	129
2.4	130
2.7	131
3	132
3.3	133

INDUCTOR

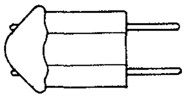
MICRO INDUCTOR

1 μH through 470 μH
±5%

-21



-00



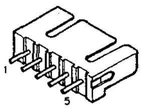
Parts No. 1-408-□□□-□□

Value	Parts No. –□□□–	Value	Parts No. –□□□–	Value	Parts No. –□□□–	Value	Parts No. –□□□–
1 μH	397	4.7 μH	405	22 μH	413	100 μH	421
1.2	398	5.6	406	27	414	120	422
1.5	399	6.8	407	33	415	150	423
1.8	400	8.2	408	39	416	180	424
2.2	401	10	409	47	417	220	425
2.7	402	12	410	56	418	270	426
3.3	403	15	411	68	419	330	427
3.9	404	18	412	82	420	390	428
						470	429

CONNECTOR

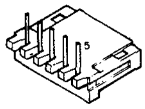
plug

top-type receptacle



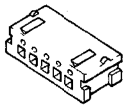
2P	1-564-001-11
3P	002-00
4P	003-00
5P	004-00
6P	005-00
7P	006-11
8P	007-00
9P	008-00
10P	009-00
11P	010-11
12P	011-11
13P	
14P	069-00
15P	

side-type receptacle



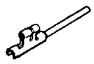
2P	1-564-012-00
3P	013-00
4P	014-00
5P	015-00
6P	016-00
7P	017-00
8P	018-11
9P	019-11
10P	020-00
11P	021-11
12P	022-00
13P	
14P	
15P	

housing



2P	1-562-147-11
3P	148-11
4P	149-11
5P	150-11
6P	151-11
7P	152-11
8P	153-11
9P	154-11
10P	155-11
11P	156-11
12P	157-11
13P	
14P	185-00
15P	

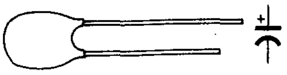
contact



1-564-026-21

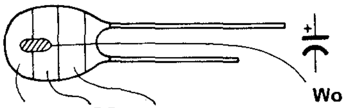
C, TANTALUM

TANTALUM CAPACITOR



0.01μF through 100μF ± 10%
3.15V through 35V

NOTE: The value of the parts that are marked by * in the below table are indicated by color code. (to the value with ±20%)



Working Voltage Color Code

Ex. BRN GRN BLU
1 5 6
15×10^6 pF = 15μF

BLK	RED	YEL	GRN	BLU	GRY	WHT
10V	35	6.3	16	20	25	3.15

Parts No. 1-131-□□□-00

Value		Parts No. —□□□—
0.01μ	35V	*396
0.015	35	*397
0.022	35	*398
0.033	35	*399
0.047	35	*400
0.068	35	*401
0.1	35	341
0.15	35	342
0.22	35	343
0.33	25	*409
	35	344
0.47	20	*412
	35	345
0.68	16	*415
	25	*410
	35	346
1.0	10	*418
	25	498

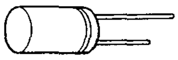
Value		Parts No. —□□□—
1.0μ	35V	347
1.5	6.3	*421
	20	499
	25	354
	35	348
2.2	3.15	*424
	16	500
	20	361
	25	355
	35	349
3.3	10	501
	16	368
	20	362
	25	356
	35	350
4.7	6.3	502
	10	375
	16	369

Value		Parts No. —□□□—
4.7μ	20V	363
	25	357
	35	351
6.8	3.15	503
	6.3	382
	10	376
	16	370
	20	364
	25	358
	35	352
10	3.15	389
	6.3	383
	10	377
	16	371
	20	365
	25	359
	35	353
15	3.15	390
	6.3	384

Value		Parts No. —□□□—
15μ	10V	378
	16	372
	20	366
	25	360
22	3.15	391
	6.3	385
	10	379
	16	373
	20	367
33	3.15	392
	6.3	386
	10	380
	16	374
47	3.15	393
	6.3	387
	10	381
68	3.15	394
	6.3	388
100	3.15	395

ELECTROLYTIC CAPACITOR

0.1μF through 100μF
6.3WV through 50WV

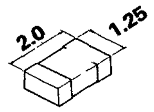


Parts No. 1-123-□□□-00

Value		Parts No. –□□□–
0.1μF	50V	607
0.22	50	608
0.33	50	609
0.47	50	610
0.68	50	902
1	50	611
2.2	50	612
3.3	35	614
	50	613
4.7	25	616
	35	615
	50	619
10	16	617
	25	621
	35	620
	50	816

Value		Parts No. –□□□–
22μF	6.3V	618
	10	644
	16	622
	25	818
	35	817
33	6.3	646
	10	645
	16	820
	25	819
47	6.3	647
	10	822
	16	821
100	6.3	661

CHIP CERAMIC CAPACITOR



220pF through 0.018μF(B) ± 10% 50WV
0.022μF through 0.068μF(F) $^{+80}_{-20}$ % 50WV
0.1μF(F) $^{+80}_{-20}$ % 25WV

Parts No. 1-163-□□□-00

Value	Parts No. – □□□ –
100pF	—
120	—
150	—
180	—
220	001
270	002
330	003
390	004
470	005
560	006
680	007
820	008

Value	Parts No. – □□□ –
0.001μF	009
0.0012	010
0.0015	011
0.0018	012
0.0022	013
0.0027	014
0.0033	015
0.0039	016
0.0047	017
0.0056	018
0.0068	019
0.0082	020

Value	Parts No. – □□□ –
0.01μF	021
0.012	022
0.015	023
0.018	024
0.022	033
0.027	—
0.033	034
0.039	—
0.047	035
0.056	—
0.068	036
0.082	—
0.1	038

EF-13 BOARD

Ref No.	Part No.	Description
	A-7513-364-A	MOUNTED CIRCUIT BOARD "EF-13" (J, UC) (BRZ)
	A-7513-365-A	MOUNTED CIRCUIT BOARD "EF-13" (EK)
C1	**1-124-139-00**	**ELECT 100 20% 10V**
C4	**1-124-139-00**	**ELECT 100 20% 10V**
C7	**1-124-139-00**	**ELECT 100 20% 10V**
C10	**1-124-139-00**	**ELECT 100 20% 10V**
C13	**1-124-139-00**	**ELECT 100 20% 10V**
C16	**1-124-139-00**	**ELECT 100 20% 10V**
C19	**1-124-139-00**	**ELECT 100 20% 10V**
C22	**1-124-139-00**	**ELECT 100 20% 10V**
C32	**1-124-284-00**	**ELECT 10 20% 16V**
C33	**1-124-284-00**	**ELECT 10 20% 16V**
C44	**1-124-284-00**	**ELECT 10 20% 16V**
C47	**1-124-284-00**	**ELECT 10 20% 16V**
C61	**1-124-284-00**	**ELECT 10 20% 16V**
C65	**1-124-284-00**	**ELECT 10 20% 16V**
C89	**1-124-290-00**	**ELECT 47 20% 10V**
C106	**1-124-284-00**	**ELECT 10 20% 16V**
C110	**1-124-284-00**	**ELECT 10 20% 16V**
C121	**1-124-284-00**	**ELECT 10 20% 16V**
C122	**1-124-284-00**	**ELECT 10 20% 16V**
C133	**1-124-284-00**	**ELECT 10 20% 16V**
C142	**1-124-284-00**	**ELECT 10 20% 16V**
C146	**1-124-139-00**	**ELECT 100 20% 10V**
C147	**1-124-343-00**	**ELECT 2200 20% 16V**
C167	**1-124-284-00**	**ELECT 10 20% 16V**
C171	**1-124-284-00**	**ELECT 10 20% 16V**
C181	**1-124-284-00**	**ELECT 10 20% 16V**
C182	**1-124-284-00**	**ELECT 10 20% 16V**
C192	**1-124-284-00**	**ELECT 10 20% 16V**
C201	**1-124-284-00**	**ELECT 10 20% 16V**
C205	**1-124-139-00**	**ELECT 100 20% 10V**
C206	**1-124-343-00**	**ELECT 2200 20% 16V**
C220	**1-124-343-00**	**ELECT 2200 20% 16V**
C241	**1-124-290-00**	**ELECT 47 20% 10V**
C244	**1-124-284-00**	**ELECT 10 20% 16V**
C247	**1-107-210-00**	**MICA 22PF 5% 500V**
C249	**1-107-159-00**	**MICA 33PF 5% 500V**
C251	**1-124-146-00**	**ELECT 470 20% 16V**
C254	**1-124-284-00**	**ELECT 10 20% 16V**
C257	**1-107-210-00**	**MICA 22PF 5% 500V**
C259	**1-107-159-00**	**MICA 33PF 5% 500V**
C261	**1-124-146-00**	**ELECT 470 20% 16V**
C264	**1-107-208-00**	**MICA 18PF 5% 500V**
C265	**1-107-208-00**	**MICA 18PF 5% 500V**
CN1	1-506-654-11	RICEPTACLE, 100P MALE
CV1	**1-141-291-11**	**CERAMIC 20PF**
CV2	**1-141-291-11**	**CERAMIC 20PF**
CV3	**1-141-291-11**	**CERAMIC 20PF**
CV4	**1-141-291-11**	**CERAMIC 20PF**
CV5	**1-141-301-11**	**CERAMIC 35PF**
CV6	**1-141-301-11**	**CERAMIC 35PF**
CV8	**1-141-301-11**	**CERAMIC 35PF**
CV9	**1-141-301-11**	**CERAMIC 35PF**
CV11	**1-141-291-11**	**CERAMIC 20PF**
CV12	**1-141-291-11**	**CERAMIC 20PF**
D1	**8-719-911-19**	**1SS119**
D2	**8-719-911-19**	**1SS119**
D3	**8-719-911-19**	**1SS119**
D4	**8-719-911-19**	**1SS119**
D5	**8-719-911-19**	**1SS119**
D6	**8-719-911-19**	**1SS119**
D7	**8-719-100-35**	**RD5.6EB2**
D8	**8-719-100-35**	**RD5.6EB2**
D9	**8-719-100-35**	**RD5.6EB2**
D10	**8-719-100-35**	**RD5.6EB2**
D11	**8-719-100-21**	**RD3.9EB2**
D12	**8-719-100-21**	**RD3.9EB2**
D13	**8-719-911-19**	**1SS119**
D14	**8-719-911-19**	**1SS119**
D15	**8-719-911-19**	**1SS119**
D16	**8-719-911-19**	**1SS119**
D17	**8-719-911-19**	**1SS119**
D18	**8-719-911-19**	**1SS119**
D19	**8-719-911-19**	**1SS119**
D20	**8-719-911-19**	**1SS119**
D21	**8-719-911-19**	**1SS119**
D22	**8-719-911-19**	**1SS119**
D23	**8-719-911-19**	**1SS119**
D24	**8-719-911-19**	**1SS119**
D25	**8-719-911-19**	**1SS119**

Ref No.	Part No.	Description
D26	8-719-911-19	1SS119
D27	8-719-911-19	1SS119
D28	8-719-911-19	1SS119
DL1	1-415-261-00	20nS
DL2	1-415-261-00	20nS
DL3	1-415-261-00	20nS
DL4	1-415-261-00	20nS
DL7	1-415-468-11	15nS
DL8	1-415-468-11	15nS
IC1	8-759-340-52	HD14052BP: HITACHI
IC2	8-741-137-30	BX1373: SONY
IC3	8-741-137-40	BX1374: SONY
IC4	8-749-939-92	BX3992: SONY
IC5	8-759-340-52	HD14052BP: HITACHI
IC6	8-741-137-30	BX1373: SONY
IC7	8-749-939-92	BX3992: SONY
IC8	8-741-137-40	BX1374: SONY
IC9	8-759-340-52	HD14052BP: HITACHI
IC10	8-741-137-30	BX1373: SONY
IC11	8-759-340-53	HD14053BP: HITACHI
IC12	8-759-340-52	HD14052BP: HITACHI
IC13	8-741-137-30	BX1373: SONY
IC14	8-759-340-53	HD14053BP: HITACHI
IC15	8-741-137-40	BX1374: SONY
IC16	8-749-939-92	BX3992: SONY
IC17	8-741-137-40	BX1374: SONY
IC18	8-741-137-40	BX1374: SONY
IC19	8-749-426-10	EHK-AW2610: PANASONIC
IC20	8-741-137-40	BX1374: SONY
IC21	8-749-939-92	BX3992: SONY
IC22	8-741-137-40	BX1374: SONY
IC23	8-741-137-40	BX1374: SONY
IC24	8-749-426-10	EHK-AW2610: PANASONIC
Q1	8-729-110-53	2SA1005
Q2	8-729-110-53	2SA1005
Q3	8-729-110-53	2SA1005
Q4	8-729-110-53	2SA1005
Q5	8-729-110-53	2SA1005
Q6	8-729-110-53	2SA1005
Q7	8-729-110-53	2SA1005
Q8	8-729-110-53	2SA1005
Q10	8-729-178-54	2SC2785
Q11	8-729-178-54	2SC2785

Ref No.	Part No.	Description
Q12	8-729-178-54	2SC2785
Q13	8-729-178-54	2SC2785
Q14	8-729-178-54	2SC2785
Q15	8-729-178-54	2SC2785
Q16	8-729-178-54	2SC2785
Q17	8-729-178-54	2SC2785
Q18	8-729-178-54	2SC2785
Q19	8-729-117-54	2SA1175
Q20	8-729-117-54	2SA1175
Q21	8-729-266-83	2SC2668
Q22	8-729-178-54	2SC2785
Q23	8-729-117-54	2SA1175
Q24	8-729-117-54	2SA1175
Q25	8-729-117-54	2SA1175
Q26	8-729-117-54	2SA1175
Q27	8-729-178-54	2SC2785
Q28	8-729-178-54	2SC2785
Q29	8-729-178-54	2SC2785
Q30	8-729-178-54	2SC2785
Q31	8-729-178-54	2SC2785
Q32	8-729-178-54	2SC2785
Q33	8-729-178-54	2SC2785
Q34	8-729-178-54	2SC2785
Q35	8-729-178-54	2SC2785
Q36	8-729-178-54	2SC2785
Q37	8-729-117-54	2SA1175
Q38	8-729-117-54	2SA1175
Q39	8-729-266-83	2SC2668
Q40	8-729-178-54	2SC2785
Q41	8-729-178-54	2SC2785
Q42	8-729-178-54	2SC2785
Q43	8-729-178-54	2SC2785
Q44	8-729-178-54	2SC2785
Q45	8-729-178-54	2SC2785
Q46	8-729-178-54	2SC2785
Q47	8-729-178-54	2SC2785
Q48	8-729-178-54	2SC2785
Q49	8-729-178-54	2SC2785
Q50	8-729-178-54	2SC2785
Q51	8-729-178-54	2SC2785
Q52	8-729-178-54	2SC2785
Q53	8-729-117-54	2SA1175
Q54	8-729-117-54	2SA1175
Q55	8-729-266-83	2SC2668
Q56	8-729-178-54	2SC2785

Ref No.	Part No.	Description
Q57	8-729-178-54	2SC2785
Q58	8-729-178-54	2SC2785
Q59	8-729-117-54	2SA1175
Q60	8-729-117-54	2SA1175
Q61	8-729-117-54	2SA1175
Q62	8-729-117-54	2SA1175
Q63	8-729-178-54	2SC2785
Q64	8-729-178-54	2SC2785
Q65	8-729-178-54	2SC2785
Q66	8-729-178-54	2SC2785
Q67	8-729-178-54	2SC2785
Q68	8-729-178-54	2SC2785
Q69	8-729-178-54	2SC2785
Q70	8-729-178-54	2SC2785
Q71	8-729-178-54	2SC2785
Q72	8-729-117-54	2SA1175
Q73	8-729-117-54	2SA1175
Q74	8-729-266-83	2SC2668
Q75	8-729-178-54	2SC2785
Q76	8-729-178-54	2SC2785
Q77	8-729-178-54	2SC2785
Q78	8-729-117-54	2SA1175
Q79	8-729-117-54	2SA1175
Q80	8-729-117-54	2SA1175
Q81	8-729-117-54	2SA1175
Q82	8-729-178-54	2SC2785
Q83	8-729-117-54	2SA1175
Q84	8-729-117-54	2SA1175
Q85	8-729-178-54	2SC2785
Q86	8-729-117-54	2SA1175
Q87	8-729-117-54	2SA1175
Q88	8-729-117-54	2SA1175
Q89	8-729-625-91	2SC2259
Q90	8-729-117-54	2SA1175
Q91	8-729-117-54	2SA1175
Q92	8-729-178-54	2SC2785
Q93	8-729-178-54	2SC2785
Q94	8-729-117-54	2SA1175
Q95	8-729-677-14	2SC2771
Q97	8-729-178-54	2SC2785
Q100	8-729-178-54	2SC2785
Q101	8-729-117-54	2SA1175
Q103	8-729-178-54	2SC2785
Q104	8-729-117-54	2SA1175
Q105	8-729-117-54	2SA1175

Ref No.	Part No.	Description
Q106	8-729-178-54	2SC2785
Q107	8-729-117-54	2SA1175
Q108	8-729-117-54	2SA1175
Q109	8-729-178-54	2SC2785
Q110	8-729-117-54	2SA1175
Q111	8-729-117-54	2SA1175
Q112	8-729-178-54	2SC2785
Q113	8-729-178-54	2SC2785
Q114	8-729-677-14	2SC2771
Q116	8-729-178-54	2SC2785
Q119	8-729-178-54	2SC2785
Q120	8-729-178-54	2SC2785
Q121	8-729-117-54	2SA1175
Q122	8-729-117-54	2SA1175
Q123	8-729-117-54	2SA1175
Q124	8-729-117-54	2SA1175
Q125	8-729-117-54	2SA1175
Q126	8-729-178-54	2SC2785
Q127	8-729-178-54	2SC2785
Q128	8-729-178-54	2SC2785
Q129	8-729-178-54	2SC2785
Q130	8-729-117-54	2SA1175
Q131	8-729-178-54	2SC2785
Q132	8-729-117-54	2SA1175
Q133	8-729-266-83	2SC2668
Q134	8-729-178-54	2SC2785
Q135	8-729-117-54	2SA1175
Q136	8-729-178-54	2SC2785
Q137	8-729-117-54	2SA1175
Q138	8-729-266-83	2SC2668
Q139	8-729-178-54	2SC2785
RV1	1-237-128-00	METAL 100
RV2	1-230-520-11	METAL 1K
RV3	1-230-524-11	METAL 22K
RV4	1-237-128-00	METAL 100
RV5	1-237-128-00	METAL 100
RV6	1-230-522-11	METAL 4700
RV7	1-230-521-11	METAL 2200
RV8	1-237-128-00	METAL 100
RV9	1-230-520-11	METAL 1K
RV10	1-230-524-11	METAL 22K
RV11	1-237-128-00	METAL 100
RV12	1-237-128-00	METAL 100
RV13	1-237-128-00	METAL 100
RV14	1-237-128-00	METAL 100
RV15	1-230-520-11	METAL 1K

Ref No.	Part No.	Description
RV16	**1-230-524-11**	**METAL 22K**
RV17	**1-237-128-00**	**METAL 100**
RV18	**1-237-128-00**	**METAL 100**
RV19	**1-230-520-11**	**METAL 1K**
RV20	**1-230-524-11**	**METAL 22K**
RV21	**1-237-128-00**	**METAL 100**
RV22	**1-237-128-00**	**METAL 100**
RV23	**1-230-521-11**	**METAL 2200**
RV24	**1-230-522-11**	**METAL 4700**
RV25	**1-228-518-00**	**METAL 1K**
RV26	**1-230-524-11**	**METAL 22K**
RV27	**1-230-202-00**	**METAL 100**
RV28	**1-237-128-00**	**METAL 100**
RV29	**1-230-520-11**	**METAL 1K**
RV31	**1-230-520-11**	**METAL 1K**
RV32	**1-237-128-00**	**METAL 100**
RV33	**1-237-128-00**	**METAL 100**
RV34	**1-230-520-11**	**METAL 1K**
RV35	**1-230-524-11**	**METAL 22K**
RV36	**1-237-128-00**	**METAL 100**
RV37	**1-237-128-00**	**METAL 100**
RV38	**1-230-521-11**	**METAL 2200**
RV39	**1-230-522-11**	**METAL 4700**
RV40	**1-228-518-00**	**METAL 1K**
RV41	**1-228-892-00**	**METAL 22K**
RV42	**1-230-202-00**	**METAL 100**
RV43	**1-237-128-00**	**METAL 100**
RV44	**1-230-520-11**	**METAL 1K**
RV46	**1-228-892-00**	**METAL 22K**
RV47	**1-228-892-00**	**METAL 22K**
RV48	**1-230-522-11**	**METAL 4700**
RV49	**1-228-892-00**	**METAL 22K**
RV50	**1-237-129-00**	**METAL 220**
RV51	**1-228-887-00**	**METAL 470**
RV52	**1-228-892-00**	**METAL 22K**
RV53	**1-237-129-00**	**METAL 220**
RV54	**1-228-887-00**	**METAL 470**
RV55	**1-228-309-00**	**METAL 20K**
S1	**1-570-373-11**	**SLIDE "TM FADER/BORDER KEY (1)"**
S2	**1-570-373-11**	**SLIDE "TM FADER/BORDER KEY (2)"**
TH1	**1-800-071-XX**	**S-300**
TH2	**1-800-071-XX**	**S-300**

HN-31 BOARD

Ref No.	Part No.	Description
	A-7513-358-A	MOUNTED CIRCUIT BOARD "HN-31"
CN1	1-563-143-11	RECEPTACLE, 100P FEMALE
CN2	1-563-143-11	RECEPTACLE, 100P FEMALE
CN3	1-563-143-11	RECEPTACLE, 100P FEMALE
CN4	1-563-143-11	RECEPTACLE, 100P FEMALE
CN5	1-563-143-11	RECEPTACLE, 100P FEMALE
CN6	1-506-665-11	RECEPTACLE, 8P MALE
	1-563-230-11	**PLUG HOUSING 8P FEMALE**
CN7	1-506-666-11	RECEPTACLE, 10P MALE
	1-563-231-11	**PLUG, HOUSING 10P FEMALE**

JK-15, KY-123

JK-15 BOARD

Ref No.	Part No.	Description
	1-617-821-11	PRINTED CIRCUIT BOARD "JK-15"
	1-507-883-00	**JACK SMALL TYPE**

KY-123 BOARD

Ref No.	Part No.	Description
	A-7513-565-A	MOUNTED CIRCUIT BOARD "KY-123" (WITH JK-15, LP-37BOARD)
C6	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C8	**1-124-135-00**	**ELECT 470 20% 6.3V**
C10	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C11	**1-124-140-00**	**ELECT 220 20% 10V**
C13	**1-124-140-00**	**ELECT 220 20% 10V**
C18	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C19	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C20	**1-124-140-00**	**ELECT 220 20% 10**
C22	**1-124-135-00**	**ELECT 470 20% 6.3V**
CN1	1-558-381-11	WIRE ASSY
CN2	1-558-381-11	WIRE ASSY
D1	**8-719-815-55**	**1S1555**
D2	**8-719-815-55**	**1S1555**
D3	**8-719-815-55**	**1S1555**
D4	**8-719-815-55**	**1S1555**
D5	**8-719-815-55**	**1S1555**
D6	**8-719-815-55**	**1S1555**
D7	**8-719-815-55**	**1S1555**
D8	**8-719-815-55**	**1S1555**
D9	**8-719-815-55**	**1S1555**
D10	**8-719-815-55**	**1S1555**
D11	**8-719-815-55**	**1S1555**
D12	**8-719-815-55**	**1S1555**
D13	**8-719-815-55**	**1S1555**
D14	**8-719-815-55**	**1S1555**
D15	**8-719-815-55**	**1S1555**
D16	**8-719-815-55**	**1S1555**
D17	**8-719-815-55**	**1S1555**
D18	**8-719-815-55**	**1S1555**
D19	**8-719-815-55**	**1S1555**
D20	**8-719-815-55**	**1S1555**
D21	**8-719-815-55**	**1S1555**
D22	**8-719-815-55**	**1S1555**
D23	**8-719-815-55**	**1S1555**
D24	**8-719-815-55**	**1S1555**
D25	**8-719-815-55**	**1S1555**
D26	**8-719-815-55**	**1S1555**
D27	**8-719-815-55**	**1S1555**
D28	**8-719-815-55**	**1S1555**
D29	**8-719-815-55**	**1S1555**
D30	**8-719-815-55**	**1S1555**
D31	**8-719-815-55**	**1S1555**
D32	**8-719-815-55**	**1S1555**
D33	**8-719-815-55**	**1S1555**
D34	**8-719-815-55**	**1S1555**
D35	**8-719-815-55**	**1S1555**
D36	**8-719-815-55**	**1S1555**
D37	**8-719-815-55**	**1S1555**
D38	**8-719-815-55**	**1S1555**
D39	**8-719-815-55**	**1S1555**
D40	**8-719-815-55**	**1S1555**
D41	**8-719-815-55**	**1S1555**
D42	**8-719-815-55**	**1S1555**
D43	**8-719-815-55**	**1S1555**
D44	**8-719-815-55**	**1S1555**
D45	**8-719-815-55**	**1S1555**
D46	**8-719-815-55**	**1S1555**
D47	**8-719-143-07**	**RD4.3EB**
D48	**8-719-815-55**	**1S1555**
D49	**8-719-815-55**	**1S1555**
D50	**8-719-143-07**	**RD4.3EB**
D51	**8-719-815-55**	**1S1555**
D52	**8-719-815-55**	**1S1555**
D53	**8-719-815-55**	**1S1555**
D54	**8-719-815-55**	**1S1555**
D55	**8-719-815-55**	**1S1555**
D56	**8-719-815-55**	**1S1555**
D57	**8-719-815-55**	**1S1555**
D58	**8-719-815-55**	**1S1555**
D59	**8-719-815-55**	**1S1555**
D60	**8-719-815-55**	**1S1555**
D61	**8-719-815-55**	**1S1555**
IC1	**8-759-245-32**	**TC4532BP: TOSHIBA**
IC2	**8-759-345-02**	**HD14502BP: HITACHI**
IC3	**8-759-245-32**	**TC4532BP: TOSHIBA**
IC4	**8-759-345-02**	**HD14502BP: HITACHI**
IC5	**8-759-245-32**	**TC4532BP: TOSHIBA**

Ref No.	Part No.	Description
IC6	8-759-345-02	HD14502BP: HITACHI
IC7	8-759-240-53	TC4053BP: TOSHIBA
IC8	8-759-240-53	TC4053BP: TOSHIBA
IC9	8-759-240-53	TC4053BP: TOSHIBA
IC10	8-759-262-15	TD62105P: TOSHIBA
IC11	8-759-262-15	TD62105P: TOSHIBA
IC12	8-759-262-15	TD62105P: TOSHIBA
IC13	8-759-262-15	TD62105P: TOSHIBA
IC14	8-759-262-15	TD62105P: TOSHIBA
IC15	8-759-262-15	TD62105P: TOSHIBA
IC16	8-759-262-15	TD62105P: TOSHIBA
IC17	8-759-262-15	TD62105P: TOSHIBA
IC18	8-759-262-15	TD62105P: TOSHIBA
IC19	8-759-240-01	TC4001BP: TOSHIBA
IC20	8-759-240-01	TC4001BP: TOSHIBA
IC22	8-759-240-28	TC4028BP: TOSHIBA
IC23	8-759-240-28	TC4028BP: TOSHIBA
IC24	8-759-240-28	TC4028BP: TOSHIBA
IC25	8-759-240-28	TC4028BP: TOSHIBA
IC25	8-759-240-28	TC4028BP: TOSHIBA
IC26	8-759-240-28	TC4028BP: TOSHIBA
IC27	8-759-700-04	NJM2043D-D: JRC
IC28	8-759-700-04	NJM2043D-D: JRC
IC29	8-759-206-97	TC5069BP: TOSHIBA
IC30	8-759-262-15	TD62105P: TOSHIBA
IC31	8-759-262-15	TD62105P: TOSHIBA
IC32	8-759-262-15	TD62105P: TOSHIBA
IC33	8-759-240-49	TC4049BP: TOSHIBA
PL1	1-518-259-00	5V 60mA
PL2	1-518-259-00	5V 60mA
PL3	1-518-259-00	5V 60mA
PL4	1-518-259-00	5V 60mA
PL5	1-518-259-00	5V 60mA
PL6	1-518-259-00	5V 60mA
PL7	1-518-259-00	5V 60mA
PL8	1-518-259-00	5V 60mA
PL9	1-518-259-00	5V 60mA
PL10	1-518-259-00	5V 60mA
PL11	1-518-259-00	5V 60mA
PL12	1-518-259-00	5V 60mA
Q1	8-729-378-91	2SD789
Q2	8-729-378-91	2SD789
Q3	8-729-378-91	2SD789
Q4	8-729-378-91	2SD789
Q5	8-729-378-91	2SD789

Ref No.	Part No.	Description
Q6	8-729-378-91	2SD789
Q7	8-729-117-54	2SA1175
Q8	8-729-117-54	2SA1175
Q9	8-729-117-54	2SA1175
Q10	8-729-117-54	2SA1175
Q12	8-729-178-54	2SC2785
Q13	8-729-117-54	2SA1175
Q15	8-729-178-54	2SC2785
Q16	8-729-117-54	2SA1175
Q17	8-729-378-91	2SD789
Q18	8-729-378-91	2SD789
Q19	8-729-378-91	2SD789
RV1	1-228-887-00	METAL 470
RV2	1-228-887-00	METAL 470
RV3	1-228-887-00	METAL 470
RV4	1-228-395-00	METAL 10K
RV5	1-228-761-00	METAL 100K
RV6	1-228-395-00	METAL 10K
RV7	1-237-126-11	SLIDE 5K
RV8	1-230-137-00	METAL 5K
RV9	1-230-137-00	METAL 5K
RV10	1-230-137-00	METAL 5K
RV11	1-230-137-00	METAL 5K
RV12	1-230-137-00	METAL 5K
RV13	1-230-137-00	METAL 5K
RV14	1-226-342-31	METAL 5K
RV15	1-226-342-31	METAL 5K
RV16	1-226-342-31	METAL 5K
RV20	1-228-887-00	METAL 470
RV21	1-228-887-00	METAL 470
RV22	1-228-887-00	METAL 470
S1	1-570-516-91	PUSH A BUS
~	1-518-450-31	PILOT LAMP
S8	3-707-232-01	COVER
	3-707-049-01	KEYTOP
S9	1-570-515-81	PUSH A BUS
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-233-71	KEYTOP "GROUND"
S10	1-570-516-91	PUSH B BUS
~	1-518-450-31	PILOT LAMP
S17	3-707-232-01	COVER
	3-707-049-01	KEYTOP

Ref No.	Part No.	Description
S18	1-570-515-81	PUSH B BUS
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-233-71	KEYTOP "GROUND"
S19	1-570-516-91	PUSH PST
∫	1-518-450-31	PILOT LAMP
S26	3-707-232-01	COVER
	3-707-049-01	KEYTOP
S27	1-570-515-81	PUSH PST
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-233-71	KEYTOP "GROUND"
S28	1-570-515-61	PUSH
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-233-51	KEYTOP "EFF"
S29	1-570-515-91	PUSH WIPE
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-234-01	KEYTOP "◲↑"
S30	1-570-516-11	PUSH WIPE
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-234-11	KEYTOP "◱↑"
S31	1-570-516-21	PUSH WIPE
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-234-21	KEYTOP "◧↑"
S32	1-570-516-31	PUSH WIPE
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-234-31	KEYTOP "◳↓"
S33	1-570-516-41	PUSH WIPE
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-234-41	KEYTOP "◰↓"
S34	1-570-516-51	PUSH WIPE
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-234-51	KEYTOP "⬒↓"
S35	1-570-516-61	PUSH WIPE
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-234-61	KEYTOP "⊙"
S36	1-570-516-71	PUSH WIPE
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-234-71	KEYTOP "◈"
S37	1-570-516-81	PUSH WIPE
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-234-81	KEYTOP "⊡"
S38	1-570-515-11	PUSH
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-233-01	KEYTOP "MIX"

Ref No.	Part No.	Description
S39	1-570-515-71	PUSH
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-233-61	KEYTOP "WIPE SHIFT"
S40	1-570-515-21	PUSH
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-233-11	KEYTOP "EXT KEY"
S41	1-570-515-51	PUSH
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-233-41	KEYTOP "TAKE"
S42	1-570-515-31	PUSH
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-233-21	KEYTOP "PST"
S43	1-570-515-41	PUSH
	1-518-450-31	PILOT LAMP
	3-707-232-01	COVER
	3-707-233-31	KEYTOP "PGM"
S44	1-516-995-00	SLIDE "WHT/COL/BLK"
S45	1-516-995-00	SLIDE "WHT/COL/BLK"
S46	1-516-995-00	SLIDE "WHT/COL/BLK"
S47	1-516-961-21	SLIDE "PGM/PST"
S48	1-516-961-21	SLIDE "POSITION "ON/OFF"
S49	1-516-995-00	SLIDE "SOFT/HARD/BDR"
S50	1-516-995-00	SLIDE "PAIRING/OFF/ECHO"
S51	1-516-995-00	SLIDE "CM/ B/W /EXT"
S52	1-516-995-00	SLIDE "DSP/OFF/PHASE"
S53	1-516-961-21	SLIDE "NORMAL/INVERT"
S54	1-516-995-00	SLIDE "WIDE/OFF/NARW"
T1	1-427-487-00	OUTPUT
T2	1-427-487-00	OUTPUT

LP-37 BOARD

Ref No.	Part No.	Description
	1-622-186-11	PRINTED CIRCUIT BOARD "LP-37"
D1	8-719-907-33	5082-7433 Ω SD-17 BOARD

SD-17 BOARD

Ref No.	Part No.	Description
	A-7615-203-A	SD-17(N) ASSY "SD-17, SG-125" (J, UC)
	A-7615-206-A	SD-17(P) ASSY "SD-17, SG-125" (EK)
	A-7615-209-A	SD-17(PM) ASSY "SD-17, SG-125" (BRZ)
C4	1-163-141-00	CERAMIC CHIP 0.001 5% 50V
C23	1-163-117-00	CERAMIC CHIP 100PF 5% 50V
C24	1-163-117-00	CERAMIC CHIP 100PF 5% 50V
C27	1-124-455-00	ELECT 100 20% 16V
C28	1-124-455-00	ELECT 100 20% 16V
C37	1-163-117-00	CERAMIC CHIP 100PF 5% 50V
C46	1-107-210-00	MICA 22PF 5% 500V
C49	1-107-157-00	MICA 27PF 5% 500V (J, UC) (BRZ)
	1-107-208-00	MICA 18PF5% 500V (EK)
C52	1-163-125-00	CERAMIC CHIP 220PF 5% 50V
C60	1-107-210-00	MICA 22PF 5% 500V
C61	1-107-210-00	MICA 22PF 5% 500V
C69	1-107-210-00	MICA 22PF 5% 500V (EK)
	1-107-159-00	MICA 33PF 5% 500V (BRZ)
C70	1-107-210-00	MICA 22PF 5% 500V (EK)
	1-107-159-00	MICA 33PF 5% 500V (BRZ)
C87	1-124-290-00	ELECT 47 20% 10V
C88	1-124-290-00	ELECT 47 20% 10V
C89	1-124-290-00	ELECT 47 20% 10V
C90	1-124-290-00	ELECT 47 20% 10V
C96	1-124-288-00	ELECT 22 20% 10V
C97	1-163-117-00	CERAMIC CHIP 100PF 5% 50V
C101	1-124-288-00	ELECT 22 20% 10V(EK) (BRZ)
C102	1-163-117-00	CERAMIC CHIP 100PF 5% 50V
C103	1-163-117-00	CERAMIC CHIP 100PF 5% 50V
C105	1-107-206-00	MICA 15PF 5% 500V
C106	1-107-206-00	MICA 15PF 5% 500V
C111	1-107-159-00	MICA 33PF 5% 500V (J, UC) (BRZ)
	1-107-210-00	MICA 22PF 5% 500V (EK)
C112	1-107-159-00	MICA 33PF 5% 500V (J, UC) (BRZ)
	1-107-210-00	MICA 22PF 5% 500V (EK)
C122	1-107-159-00	MICA 33PF 5% 500V (EK)
C123	1-107-159-00	MICA 33PF 5% 500V (EK)
C124	1-107-159-00	MICA 33PF 5% 500V (EK)
C125	1-107-159-00	MICA 33PF 5% 500V (EK)
C127	1-107-159-00	MICA 33PF 5% 500V
C128	1-107-159-00	MICA 33PF 5% 500V
C142	1-124-139-00	ELECT 100 20% 10V
C164	1-163-125-00	CERAMIC CHIP 220PF 5% 50V
C165	1-163-135-00	CERAMIC CHIP 560PF 5% 50V
C175	1-124-584-00	ELECT 100 20% 10V
C178	1-107-159-00	MICA 33PF 5% 500V (J, UC) (BRZ)
	1-107-210-00	MICA 22PF 5% 500V (EK)
C179	1-107-159-00	MICA 33PF 5% 500V (J, UC) (BRZ)
	1-107-210-00	MICA 22PF 5% 500V (EK)
C207	1-124-284-00	ELECT 10 20% 16V
C211	1-163-117-00	CERAMIC CHIP 100PF 5% 50V
C213	1-124-343-00	ELECT 2200 20% 16V
C214	1-107-210-00	MICA 22PF 5% 500V
C218	1-102-116-00	CERAMIC 680PF 10% 50V
C219	1-107-159-00	MICA 33PF 5% 500V (J, UC) (BRZ)
	1-107-210-00	MICA 22PF 5% 500V (EK)
C220	1-107-159-00	MICA 33PF 5% 500V (J, UC) (BRZ)
	1-107-210-00	MICA 22PF 5% 500V (EK)
C222	1-107-208-00	MICA 18PF 5% 500V
C228	1-107-208-00	MICA 18PF 5% 500V
C229	1-101-888-00	CERAMIC 68PF 5% 50V
C230	1-163-131-00	CERAMIC CHIP 390PF 5% 50V
C232	1-107-206-00	MICA 15PF 5% 500V
CN1	1-506-654-11	RECEPTACLE, 100P MALE
CV1	1-141-301-11	CERAMIC 35PF
CV2	1-141-301-11	CERAMIC 35PF
D1	8-719-100-03	1S2835
D2	8-719-100-03	1S2835
D3	8-719-100-03	1S2835
D4	8-719-100-03	1S2835
D5	8-719-100-03	1S2835
D6	8-719-101-23	1SS123
D7	8-719-101-23	1SS123
D8	8-719-101-23	1SS123
D9	8-719-100-03	1S2835
D12	8-719-100-03	1S2835

Ref No.	Part No.	Description
D13	8-719-101-23	1SS123
D14	8-719-100-03	1S2835
D15	8-719-100-03	1S2835
D16	8-719-100-03	1S2835
D17	8-719-100-03	1S2835
D18	8-719-100-03	1S2835
D19	8-719-100-03	1S2835
D20	8-719-100-03	1S2835
D21	8-719-100-03	1S2835
D22	8-719-100-03	1S2835
D23	8-719-100-03	1S2835
D24	8-719-100-03	1S2835
D25	8-719-100-03	1S2835
D26	8-719-100-03	1S2835
D27	8-719-100-03	1S2835
D28	8-719-101-23	1SS123
D29	8-719-101-23	1SS123
DL1	1-415-316-00	200N
FL1	1-235-161-00	BPF 3.58MHz (J, UC) (BRZ)
	1-235-181-00	BPF 4.43MHz (EK)
FL2	1-235-161-00	BPF 3.58MHz (J, UC) (BRZ)
	1-235-181-00	BPF 4.43MHz (EK)
FL3	1-235-246-00	TRAP 3.58MHz (J, UC) (BRZ)
	1-235-245-00	TRAP 4.4MHz (EK)
FL4	1-235-161-00	BPF 3.58MHz (J, UC) (BRZ)
	1-235-181-00	BPF 4.43MHz (EK)
IC1	8-759-045-57	MC14557BCP: MOTOROLA
IC2	8-759-000-01	MC74HC4538N: MOTOROLA
IC3	8-759-220-00	TC40H000P: TOSHIBA
IC4	8-759-240-11	TC4011BP: TOSHIBA
IC5	8-759-202-38	TC4528BF: TOSHIBA
IC6	8-759-240-49	TC4049BP: TOSHIBA
IC7	8-759-900-26	SN74LS26N: TI
IC8	8-759-900-26	SN74LS26N: TI
IC9	8-759-245-28	TC4528BP: TOSHIBA
IC10	8-759-240-69	TC4069UBP: TOSHIBA
IC11	8-759-240-69	TC4069UBP: TOSHIBA
IC12	8-759-240-42	TC4042BP: TOSHIBA
IC13	8-759-240-42	TC4042BP: TOSHIBA
IC14	8-759-240-23	TC4023BP: TOSHIBA
IC15	8-759-240-23	TC4023BP: TOSHIBA

Ref No.	Part No.	Description
IC16	8-759-240-24	TC4024BP: TOSHIBA
IC17	8-759-240-53	TC4053BP: TOSHIBA
IC18	8-759-990-82	TL082CP: TI
IC19	8-759-990-82	TL082CP: TI
IC20	8-759-133-90	μPC339C: NEC
IC21	8-759-245-28	TC4528BP: TOSHIBA
IC22	8-759-345-38	HD14538BP: HITACHI
IC23	8-759-240-11	TC4011BP: TOSHIBA
IC24	8-759-906-59	CX22017: SONY
IC25	8-759-906-59	CX22017: SONY
IC26	8-759-240-53	TC4053BP: TOSHIBA
IC27	8-759-133-90	μPC339C: NEC
IC28	8-759-240-53	TC4053BP: TOSHIBA
IC29	8-759-900-00	SN74LS00N: TI
IC30	8-759-220-00	TC40H000P: TOSHIBA
IC31	8-759-906-59	CX22017: SONY
IC32	8-759-240-53	TC4053BP: TOSHIBA
IC33	8-759-240-53	TC4053BP: TOSHIBA
IC34	8-741-137-40	BX1374: SONY
IC35	8-759-220-02	TC40H002P: TOSHIBA
LV6	1-407-573-00	MICRO 47 (EK)
	1-407-574-00	MICRO 68 (BRZ)
LV7	1-407-571-00	MICRO 22 (J, UC) (BRZ)
	1-407-575-00	MICRO 100 (EK)
LV9	1-407-574-00	MICRO 68 (J, UC) (BRZ)
	1-407-573-00	MICRO 47 (EK)
LV10	1-407-574-00	MICRO 68
LV11	1-407-574-00	MICRO 68
LV12	1-407-574-00	MICRO 68
LV15	1-407-574-00	MICRO 68 (J, UC) (BRZ)
	1-407-573-00	MICRO 47 (EK)
LV16	1-407-574-00	MICRO 68 (J, UC) (BRZ)
	1-407-573-00	MICRO 47 (EK)
Q1	8-729-100-76	2SA812
Q2	8-729-100-66	2SC1623
Q3	8-729-100-66	2SC1623
Q4	8-729-100-66	2SC1623
Q5	8-729-100-76	2SA812
Q6	8-729-100-66	2SC1623
Q7	8-729-100-66	2SC1623
Q8	8-729-100-76	2SA812
Q9	8-729-100-76	2SA812
Q10	8-729-100-76	2SA812

Ref No.	Part No.	Description
Q11	8-729-100-76	2SA812
Q12	8-729-100-76	2SA812
Q13	8-729-100-76	2SA812
Q14	8-729-100-76	2SA812
Q15	8-729-100-66	2SC1623
Q16	8-729-100-66	2SC1623
Q17	8-729-100-66	2SC1623
Q18	8-729-100-66	2SC1623
Q19	8-729-100-76	2SA812
Q20	8-729-100-76	2SA812
Q21	8-729-100-76	2SA812
Q22	8-729-100-66	2SC1623
Q23	8-729-100-76	2SA812
Q24	8-729-100-66	2SC1623
Q25	8-729-100-66	2SC1623
Q26	8-729-100-66	2SC1623
Q27	8-729-100-66	2SC1623
Q28	8-729-100-66	2SC1623
Q29	8-729-100-66	2SC1623
Q30	8-729-697-92	2SA979
Q31	8-729-100-66	2SC1623
Q32	8-729-218-43	2SK184-GR
Q33	8-729-100-66	2SC1623
Q34	8-729-100-66	2SC1623
Q35	8-729-100-66	2SC1623
Q36	8-729-100-76	2SA812
Q37	8-729-100-66	2SC1623
Q38	8-729-100-76	2SA812
Q39	8-729-100-66	2SC1623
Q40	8-729-100-76	2SA812
Q41	8-729-100-76	2SA812
Q42	8-729-100-66	2SC1623
Q43	8-729-100-66	2SC1623
Q44	8-729-100-66	2SC1623
Q45	8-729-100-66	2SC1623
Q46	8-729-100-76	2SA812
Q47	8-729-100-76	2SA812
Q48	8-729-100-66	2SC1623
Q49	8-729-100-76	2SA812
Q50	8-729-100-66	2SC1623
Q51	8-729-600-27	2SC634SP
Q52	8-729-600-27	2SC634SP
Q53	8-729-600-27	2SC634SP
Q54	8-729-600-27	2SC634SP
Q55	8-729-100-76	2SA812
Q56	8-729-100-66	2SC1623
Q57	8-729-175-72	2SC2757-T33
Q58	8-729-100-66	2SC1623
Q59	8-729-175-72	2SC2757-T33
Q60	8-729-100-66	2SC1623
Q61	8-729-100-76	2SA812
Q62	8-729-100-66	2SC1623
Q63	8-729-100-66	2SC1623
Q64	8-729-100-66	2SC1623
Q65	8-729-100-76	2SA812
Q66	8-729-100-76	2SA812
Q67	8-729-100-66	2SC1623
Q68	8-729-100-66	2SC1623
Q69	8-729-100-66	2SC1623
Q72	8-729-100-66	2SC1623
Q73	8-729-100-76	2SA812
Q74	8-729-100-66	2SC1623
Q75	8-729-100-66	2SC1623
Q76	8-729-100-66	2SC1623
Q77	8-729-100-66	2SC1623
Q78	8-729-100-76	2SA812
Q79	8-729-100-66	2SC1623
Q80	8-729-100-66	2SC1623
Q81	8-729-100-66	2SC1623
Q82	8-729-100-66	2SC1623
Q83	8-729-100-66	2SC1623
Q84	8-729-100-66	2SC1623
Q85	8-729-100-66	2SC1623
Q86	8-729-100-76	2SA812
Q87	8-729-100-66	2SC1623
Q88	8-729-100-66	2SC1623
Q89	8-729-100-66	2SC1623
Q90	8-729-100-76	2SA812
Q91	8-729-100-76	2SA812
Q92	8-729-100-66	2SC1623
Q93	8-729-100-76	2SA812
Q94	8-729-100-66	2SC1623
Q95	8-729-100-66	2SC1623
Q96	8-729-100-76	2SA812
Q97	8-729-100-66	2SC1623
Q98	8-729-100-66	2SC1623
Q99	8-729-100-66	2SC1623
Q100	8-729-100-66	2SC1623
Q101	8-729-100-66	2SC1623
Q102	8-729-100-66	2SC1623

SD-17

Ref No.	Part No.	Description
Q103	8-729-100-66	2SC1623
Q104	8-729-100-66	2SC1623
Q105	8-729-100-66	2SC1623
Q106	8-729-100-76	2SA812
Q107	8-729-100-66	2SC1623
Q108	8-729-100-66	2SC1623
Q109	8-729-100-66	2SC1623
Q110	8-729-100-66	2SC1623
Q111	8-729-100-76	2SA812
Q112	8-729-100-76	2SA812
Q113	8-729-100-76	2SA812
Q114	8-729-100-76	2SA812
Q115	8-729-100-66	2SC1623
Q116	8-729-100-66	2SC1623
Q117	8-729-100-66	2SC1623
Q118	8-729-100-66	2SC1623
Q119	8-729-100-76	2SA812
Q120	8-729-100-76	2SA812
Q121	8-729-100-76	2SA812
Q122	8-729-100-76	2SA812
Q123	8-729-100-76	2SA812
Q124	8-729-100-66	2SC1623
Q127	8-729-100-76	2SA812
Q128	8-729-100-76	2SA812
Q129	8-729-100-76	2SA812
Q130	8-729-100-76	2SA812
Q131	8-729-100-66	2SC1623
Q132	8-729-100-66	2SC1623
Q133	8-729-100-66	2SC1623
Q134	8-729-100-66	2SC1623
Q135	8-729-100-66	2SC1623
Q136	8-729-100-66	2SC1623
Q137	8-729-100-66	2SC1623
Q138	8-729-100-66	2SC1623
Q139	8-729-100-76	2SA812
Q140	8-729-100-76	2SA812
Q141	8-729-100-76	2SA812
Q142	8-729-100-76	2SA812
Q143	8-729-100-66	2SC1623
Q144	8-729-100-66	2SC1623
Q145	8-729-100-66	2SC1623
Q146	8-729-100-76	2SA812
Q147	8-729-100-66	2SC1623
Q148	8-729-100-76	2SA812
Q149	8-729-100-76	2SA812

Ref No.	Part No.	Description
Q150	8-729-100-66	2SC1623
Q151	8-729-100-76	2SA812
Q152	8-729-100-66	2SC1623
Q153	8-729-100-66	2SC1623
Q154	8-729-100-66	2SC1623
Q155	8-729-100-66	2SC1623
Q156	8-729-100-66	2SC1623
Q157	8-729-100-66	2SC1623
Q158	8-729-100-66	2SC1623
Q159	8-729-100-76	2SA812
Q160	8-729-100-66	2SC1623
Q161	8-729-100-66	2SC1623
Q162	8-729-100-66	2SC1623
Q163	8-729-100-66	2SC1623
Q164	8-729-100-66	2SC1623
Q165	8-729-100-66	2SC1623
Q166	8-729-100-66	2SC1623
Q167	8-729-100-66	2SC1623
Q170	8-729-100-66	2SC1623
Q171	8-729-100-66	2SC1623
Q172	8-729-100-66	2SC1623
Q173	8-729-100-76	2SA812
Q174	8-729-100-76	2SA812
Q175	8-729-100-66	2SC1623
Q176	8-729-100-66	2SC1623
Q177	8-729-100-76	2SA812
Q178	8-729-100-76	2SA812
Q179	8-729-100-76	2SA812
RV1	1-228-474-00	METAL 10K
RV2	1-228-474-00	METAL 10K
RV3	1-228-892-00	METAL 22K
RV4	1-228-892-00	METAL 22K
RV5	1-228-890-00	METAL 4700
RV6	1-228-891-00	METAL 10K
RV7	1-228-891-00	METAL 10K
RV8	1-228-892-00	METAL 22K
RV9	1-228-890-00	METAL 4700
RV10	1-228-892-00	METAL 22K
RV11	1-228-892-00	METAL 22K
RV12	1-228-891-00	METAL 10K
RV13	1-228-891-00	METAL 10K
RV14	1-228-892-00	METAL 22K
RV15	1-228-891-00	METAL 10K

Ref No.	Part No.	Description
RV16	1-228-889-00	METAL 2200
RV17	1-228-891-00	METAL 10K
RV19	1-228-891-00	METAL 10K
RV20	1-228-890-00	METAL 4700
RV21	1-230-526-11	METAL 47K
RV22	1-228-889-00	METAL 2200
RV23	1-228-519-00	METAL 2200
RV24	1-230-522-11	METAL 4700 (EK) (BR)
RV25	1-230-522-11	METAL 4700
RV26	1-230-522-11	METAL 4700 (EK) (BR)
RV27	1-228-520-00	METAL 470
RV28	1-230-520-11	METAL 1K
RV29	1-228-519-00	METAL 2200
RV30	1-228-519-00	METAL 2200
RV31	1-230-520-11	METAL 1K
RV32	1-230-522-11	METAL 4700
RV33	1-228-518-00	METAL 1K
RV34	1-230-524-11	METAL 22K
RV35	1-230-524-11	METAL 22K
RV36	1-230-524-11	METAL 22K
RV37	1-230-522-11	METAL 4700
RV38	1-230-520-11	METAL 1K
RV39	1-230-521-11	METAL 2200
RV40	1-237-128-00	METAL 100
RV41	1-237-128-00	METAL 100
RV42	1-230-524-11	METAL 22K
RV43	1-230-522-11	METAL 4700
RV45	1-230-523-11	METAL 10K
RV46	1-230-523-11	METAL 10K
RV47	1-230-521-11	METAL 2200
RV48	1-230-524-11	METAL 22K
RV49	1-230-520-11	METAL 1K
RV50	1-230-522-11	METAL 4700
RV51	1-230-526-00	METAL 47K
RV52	1-230-526-11	METAL 47K
RV53	1-230-524-11	METAL 22K
S1	1-554-399-00	TOGGLE "SC 0'/180'"
S2	1-570-853-11	SLIDE "19H/20H/21H" (J, UC) (BR)
	1-570-853-11	SLIDE "23H/24H/25H" (EK)
S3	1-554-399-00	TOGGLE "BF ON/OFF"
TH1	1-800-071-XX	DIRECT-HEATING DISK 300
TH2	1-800-071-XX	DIRECT-HEATING DISK 300

SG-125 BOARD

Ref No.	Part No.	Description
	A-7513-567-A	MOUNTED CIRCUIT BOARD "SG-125" (J, UC)
	A-7513-574-A	MOUNTED CIRCUIT BOARD "SG-125" (EK)
	A-7513-579-A	MOUNTED CIRCUIT BOARD "SG-125" (BRZ)
C1	1-102-246-00	CERAMIC 47PF 10% 150V
C2	1-102-246-00	CERAMIC 47PF 10% 150V
C3	1-102-242-00	CERAMIC 3PF ±0.5PF 50V
C4	1-102-246-00	CERAMIC 47PF 10% 150V
C5	1-102-246-00	CERAMIC 47PF 10% 150V
C6	1-102-363-00	CERAMIC 0.001 50V
C7	1-102-246-00	CERAMIC 47PF 10% 150V
C8	1-102-246-00	CERAMIC 47PF 10% 150V
C9	1-102-246-00	CERAMIC 47PF 10% 150V
C10	1-102-246-00	CERAMIC 47PF 10% 150V
C11	1-102-246-00	CERAMIC 47PF 10% 150V
C12	1-102-936-00	CERAMIC 3PF ±0.5PF 50V
C13	1-102-246-00	CERAMIC 47PF 10% 150V
C14	1-102-246-00	CERAMIC 47PF 10% 150V
C15	1-102-246-00	CERAMIC 47PF 10% 150V
C18	1-163-101-00	CERAMIC CHIP 22PF 5% 50V
C21	1-163-117-00	CERAMIC CHIP 100PF 5% 50V
C28	1-163-091-00	CERAMIC CHIP 8PF ±0.25PF 50V (J, UC)
C30	1-163-101-00	CERAMIC CHIP 22PF 5% 50V (J, UC)
D2	8-719-100-03	1S2835
D4	8-719-815-55	1S1555 (J, UC) (EK)
IC1	8-741-104-00	BX1040: SONY
IC2	8-759-101-12	μPC311G2: NEC
IC3	8-759-908-39	CX7998: SONY
IC4	8-741-129-10	BX1291: SONY
IC5	8-759-930-11	CX7930A1: SONY
IC6	8-759-907-81	SN74LS221NS: TI
IC8	8-741-129-21	BX1292A: SONY (J, UC) (BRZ)
	8-741-129-31	BX1293A: SONY (EK)
IC10	8-759-201-60	TC40H002F: TOSHIBA

Ref No.	Part No.	Description
L3	1-408-121-00	MICRO 22
L4	1-408-121-00	MICRO 22
Q1	8-729-100-66	2SC1623
Q2	8-729-109-44	2SK94
Q4	8-729-109-44	2SK94
Q5	8-729-100-66	2SC1623
Q6	8-729-100-76	2SA812
Q7	8-729-100-76	2SA812
Q8	8-729-100-66	2SC1623
R32	1-215-445-00	METAL 10K 1% 1/6W
R33	1-215-447-00	METAL 12K 1% 1/6W (J, UC)
	1-215-446-0	METAL 11K 1% 1/6W (EK) (BRZ)
R35	1-215-448-00	METAL 13K 1% 1/6W
RV1	1-230-522-11	METAL 4700
S1	1-570-373-00	SLIDE
VCO1	1-567-084-00	14.31818MHz (J, UC)
	1-567-112-00	17.734475MHz (EK)
	1-527-798-00	14.3024MHZ (BRZ)
VCO2	1-567-085-00	14.31818MHz (J, UC) (BR)
	1-567-086-00	14.1875MHz (EK)

SY-118 BOARD

Ref No.	Part No.	Description
	A-7513-564-A	MOUNTED CIRCUIT BOARD "SY-118(N)" (J, UC) (BR)
	A-7513-571-A	MOUNTED CIRCUIT BOARD "SY-118(P)" (EK)
		OPTIONAL ACCESSORY BK-2551 (J, UC) MOUNTED CIRCUIT BOARD "SY-118A(N)"
		OPTIONAL ACCESSORY BK-2552 (EK) MOUNTED CIRCUIT BOARD "SY-118A(P)"
C1	1-163-133-00	CERAMIC CHIP 470PF 5% 50V
C4	1-163-137-00	CERAMIC CHIP 680PF 5% 50V
C5	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C6	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C7	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C8	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C9	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C10	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C11	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C12	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C13	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C14	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C15	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C16	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C17	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C18	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C19	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C20	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C21	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C22	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
CN1	1-560-675-00	RECEPTACLE, 50P MALE
CN2	1-560-675-00	RECEPTACLE, 50P MALE
CN3	1-506-654-11	RECEPTACLE, 100P MALE

Ref No.	Part No.	Description
D1	8-719-105-32	RD2.7M-B2
D2	8-719-100-05	1S2837
D3	8-719-106-08	RD6.2M-B2
D4	8-719-106-08	RD6.2M-B2
D5	8-719-106-08	RD6.2M-B2
D6	8-719-106-08	RD6.2M-B2
D7	8-719-106-08	RD6.2M-B2
D8	8-719-106-08	RD6.2M-B2
D9	8-719-106-08	RD6.2M-B2
D10	8-719-106-08	RD6.2M-B2
D19	8-719-100-05	1S2837
D20	8-719-100-05	1S2837
D21	8-719-100-05	1S2837
D22	8-719-105-82	RD5.1M-B2
D23	8-719-105-82	RD5.1M-B2
D24	8-719-100-05	1S2837
D25	8-719-100-05	1S2837
D26	8-719-100-05	1S2837
D27	8-719-100-05	1S2837
D28	8-719-100-05	1S2837
D29	8-719-100-05	1S2837
D30	8-719-100-05	1S2837
D31	8-719-100-05	1S2837
D33	8-719-100-05	1S2837
D35	8-719-100-05	1S2837
D36	8-719-100-05	1S2837
D40	8-719-911-19	1SS119
IC1	8-759-208-09	TC4052BFHB: TOSHIBA
IC2	8-759-208-09	TC4052BFHB: TOSHIBA
IC3	8-759-208-09	TC4052BFHB: TOSHIBA
IC4	8-759-208-09	TC4052BFHB: TOSHIBA
IC5	8-759-274-76	TC7476BP: TOSHIBA
IC6	8-759-200-80	TC4050BF: TOSHIBA
IC7	8-759-200-80	TC4050BF: TOSHIBA
IC8	8-759-746-88	μPD8749HC-SYC255021: NEC
IC9	8-759-250-20	TC5020BP: TOSHIBA
IC10	8-759-250-20	TC5020BP: TOSHIBA
IC11	8-759-250-20	TC5020BP: TOSHIBA
IC12	8-759-200-77	TC4028BF: TOSHIBA
IC13	8-759-200-77	TC4028BF: TOSHIBA
IC14	8-759-200-80	TC4050BF: TOSHIBA
IC15	8-759-200-80	TC4050BF: TOSHIBA

Ref No.	Part No.	Description
IC17	8-759-300-91	HD14042BFP: HITACHI
IC18	8-759-300-91	HD14042BFP: HITACHI
IC19	8-759-300-91	HD14042BFP: HITACHI
IC20	8-759-300-91	HD14042BFP: HITACHI
IC21	8-759-300-91	HD14042BFP: HITACHI
IC22	8-759-300-91	HD14042BFP: HITACHI
IC23	8-759-300-91	HD14042BFP: HITACHI
IC24	8-759-300-91	HD14042BFP: HITACHI
IC25	8-759-300-91	HD14042BFP: HITACHI
IC26	8-759-300-91	HD14042BFP: HITACHI
IC27	8-759-300-91	HD14042BFP: HITACHI
IC28	8-759-300-91	HD14042BFP: HITACHI
IC29	8-759-300-91	HD14042BFP: HITACHI
IC30	8-759-300-91	HD14042BFP: HITACHI
IC31	8-759-300-91	HD14042BFP: HITACHI
IC32	8-759-300-91	HD14042BFP: HITACHI
IC33	8-759-300-91	HD14042BFP: HITACHI
IC34	8-759-300-91	HD14042BFP: HITACHI
IC35	8-759-300-91	HD14042BFP: HITACHI
IC36	8-759-300-91	HD14042BFP: HITACHI
IC37	8-759-300-91	HD14042BFP: HITACHI
IC38	8-759-300-91	HD14042BFP: HITACHI
IC39	8-759-300-91	HD14042BFP: HITACHI
IC40	8-759-300-91	HD14042BFP: HITACHI
IC41	8-759-300-91	HD14042BFP: HITACHI
IC42	8-759-300-91	HD14042BFP: HITACHI
IC43	8-759-300-91	HD14042BFP: HITACHI
IC44	8-759-300-91	HD14042BFP: HITACHI
IC45	8-759-300-91	HD14042BFP: HITACHI
IC46	8-759-300-91	HD14042BFP: HITACHI
IC47	8-759-300-91	HD14042BFP: HITACHI
IC48	8-759-300-91	HD14042BFP: HITACHI
IC49	8-759-300-91	HD14042BFP: HITACHI
IC50	8-759-300-91	HD14042BFP: HITACHI
IC51	8-759-200-79	TC4049BF: TOSHIBA
IC52	8-759-240-47	TC4047BP: TOSHIBA
IC53	8-759-200-84	TC4081BF: TOSHIBA
IC57	8-759-262-15	TD62105P: TOSHIBA
IC58	8-759-262-15	TD62105P: TOSHIBA
IC60	8-759-200-88	TC4512BF: TOSHIBA
IC61	8-759-200-88	TC4512BF: TOSHIBA
IC62	8-759-200-88	TC4512BF: TOSHIBA
IC63	8-759-200-88	TC4512BF: TOSHIBA
IC64	8-759-200-88	TC4512BF: TOSHIBA
IC65	8-759-200-88	TC4512BF: TOSHIBA

Ref No.	Part No.	Description
IC66	**8-759-200-88**	**TC4512BF: TOSHIBA**
IC68	**8-759-200-79**	**TC4049BF: TOSHIBA**
IC69	**8-759-200-79**	**TC4049BF: TOSHIBA**
IC70	**8-759-200-80**	**TC4050BF: TOSHIBA**
IC71	**8-759-200-71**	**TC4017BF: TOSHIBA**
IC73	**8-759-205-32**	**TC74HC374F: TOSHIBA**
IC74	**8-759-205-32**	**TC74HC374F: TOSHIBA**
IC75	**8-759-205-32**	**TC74HC374F: TOSHIBA**
IC76	**8-759-208-15**	**TC4066BFHB: TOSHIBA**
IC77	**8-759-208-15**	**TC4066BFHB: TOSHIBA**
IC78	**8-759-208-18**	**TC4528BFHB: TOSHIBA**
IC80	**8-759-205-79**	**TC504027BF: TOSHIBA**
IC81	**8-759-200-83**	**TC4071BF: TOSHIBA**
IC82	**8-759-200-80**	**TC4050BF: TOSHIBA**
IC83	**8-759-208-15**	**TC4066BFHB: TOSHIBA**
Q1	**8-729-100-66**	**2SC1623**
Q2	**8-729-100-66**	**2SC1623**
Q3	**8-729-100-76**	**2SA812**
Q4	**8-729-100-76**	**2SA812**
RY1	**1-515-434-00**	**MICRO LEAD 5V 300Ω**
RY2	**1-515-434-00**	**MICRO LEAD 5V 300Ω**
RY3	**1-515-434-00**	**MICRO LEAD 5V 300Ω**
RY4	**1-515-434-00**	**MICRO LEAD 5V 300Ω**
RY5	**1-515-434-00**	**MICRO LEAD 5V 300Ω**
RY6	**1-515-434-00**	**MICRO LEAD 5V 300Ω**
RY7	**1-515-434-00**	**MICRO LEAD 5V 300Ω**
RY8	**1-515-434-00**	**MICRO LEAD 5V 300Ω**
X1	**1-527-992-21**	**6MHz**

SY-41 BOARD

Ref No.	Part No.	Description
	A-7615-204-A	SY-41A ASSY "SY-41, SY-52" (J, UC) (BRZ)
	A-7615-207-A	SY-41A ASSY "SY-41, SY-52" (EK)
	1-526-662-21	RECEPTACLE, 40P
BZ1	**1-529-044-11**	**BUZZER**
C1	**1-101-884-00**	**CERAMIC 56PF 5% 50V**
C2	**1-101-884-00**	**CERAMIC 56PF 5% 50V**
C3	**1-101-884-00**	**CERAMIC 56PF 5% 50V**
C5	**1-163-137-00**	**CERAMIC CHIP 680PF 5% 50V**
C11	**1-124-275-00**	**ELECT 2.2 20% 35V**
C14	**1-163-137-00**	**CERAMIC CHIP 680PF 5% 50V**
C17	**1-124-143-00**	**ELECT 100 20% 16V**
C27	**1-163-137-00**	**CERAMIC CHIP 680PF 5% 50V**
C28	**1-107-210-00**	**MICA 22PF 5% 500V**
C29	**1-107-210-00**	**MICA 22PF 5% 500V**
C50	**1-124-245-00**	**ELECT 4.7 20% 25V**
C58	**1-124-455-00**	**ELECT 100 20% 16V**
C59	**1-125-447-11**	**ELECT 1.0F 5.5V**
C60	**1-125-447-11**	**ELECT 1.0F 5.5V**
C105 ~ C126	**1-163-109-00**	**CERAMIC CHIP 47PF 5% 50V**
C127 ~ C134	**1-163-133-00**	**CERAMIC CHIP 470PF 5% 50V**
CN13	1-506-654-11	RECEPTACLE, 100P MALE
CP1	**1-232-509-00**	**RESISTER, BLOCK**
CP2	**1-231-387-00**	**RESISTER, BLOCK**

Ref No.	Part No.	Description
D1	8-719-105-32	RD2.7M-B2
D2	8-719-100-05	1S2837
D3	8-719-100-05	1S2837
D4	8-719-105-32	RD2.7M-B2
D5	8-719-100-05	1S2837
D7	8-719-100-05	1S2837
D8	8-719-100-05	1S2837
D9	8-719-100-05	1S2837
D10	8-719-100-05	1S2837
D11	8-719-105-32	RD2.7M-B2
D12	8-719-100-05	1S2837
D14	8-719-105-73	RD4.7M-B2
D15	8-719-100-05	1S2837
D16	8-719-105-82	RD5.1M-B2
D17	8-719-100-05	1S2837
D18	8-719-105-82	RD5.1M-B2
D19	8-719-106-44	RD9.1M-B2
D20	8-719-106-44	RD9.1M-B2
D21	8-719-105-82	RD5.1M-B2
D22	8-719-100-05	1S2837
IC1		
IC3	8-759-205-78	TC4013BF: TOSHIBA
IC4	8-759-200-88	TC4512BF: TOSHIBA
IC5	8-759-200-88	TC4512BF: TOSHIBA
IC6	8-759-200-77	TC4028BF: TOSHIBA
IC7	8-759-300-91	HD14042BFP: HITACHI
IC8	8-759-300-91	HD14042BFP: HITACHI
IC9	8-759-200-92	TC5012BF: TOSHIBA
IC10	8-759-208-11	TC4053BFHB: TOSHIBA
IC11	8-759-208-11	TC4053BFHB: TOSHIBA
IC12	8-759-208-11	TC4053BFHB: TOSHIBA
IC13	8-759-951-88	SN75188N: TI
IC14	8-759-951-89	SN75189AN: TI
IC15	8-759-205-36	TC74HC573F: TOSHIBA
IC16	8-759-205-36	TC74HC573F: TOSHIBA
IC17		
IC18	8-759-300-91	HD14042BFP: HITACHI
IC19	8-759-908-23	MB88303: FUJITSU
IC20	8-759-206-89	TC4556BF: TOSHIBA
IC21	8-759-200-99	TC4051BF: TOSHIBA
IC22	8-759-200-99	TC4051BF: TOSHIBA
IC23	8-759-200-99	TC4051BF: TOSHIBA
IC24	8-759-200-99	TC4051BF: TOSHIBA
IC25	8-759-200-99	TC4051BF: TOSHIBA
IC26	8-759-200-99	TC4051BF: TOSHIBA

Ref No.	Part No.	Description
IC27	8-759-101-12	μPC311G2: NEC
IC28		
IC29	8-759-206-89	TC4556BF: TOSHIBA
IC30	8-759-300-91	HD14042BFP: HITACHI
IC31	8-759-208-11	TC4053BFHB: TOSHIBA
IC32	8-759-200-77	TC4028BF: TOSHIBA
IC34	8-759-205-36	TC74HC573F: TOSHIBA
IC35	8-759-300-91	HD14042BFP: HITACHI
IC36	8-759-205-36	TC74HC573F: TOSHIBA
IC37	8-759-200-77	TC4028BF: TOSHIBA
IC38	8-759-300-91	HD14042BFP: HITACHI
IC39	8-759-205-36	TC74HC573F: TOSHIBA
IC40	8-759-205-36	TC74HC573F: TOSHIBA
IC41	8-759-205-36	TC74HC573F: TOSHIBA
IC42	8-759-205-36	TC74HC573F: TOSHIBA
IC43	8-759-205-36	TC74HC573F: TOSHIBA
IC44	8-759-200-77	TC4028BF: TOSHIBA
IC45	8-759-200-99	TC4051BF: TOSHIBA
IC46	8-759-200-99	TC4051BF: TOSHIBA
IC47	8-759-303-46	HM6264LFP-15SL: HITACHI
IC48	8-759-303-46	HM6264LFP-15SL: HITACHI
IC49	8-759-303-46	HM6264LFP-15SL: HITACHI
IC50	8-759-303-46	HM6264LFP-15SL: HITACHI
IC51	8-759-303-46	HM6264LFP-15SL: HITACHI
IC52	8-759-303-46	HM6264LFP-15SL: HITACHI
IC53	8-759-303-46	HM6264LFP-15SL: HITACHI
IC54	8-759-303-46	HM6264LFP-15SL: HITACHI
IC55	8-759-303-46	HM6264LFP-15SL: HITACHI
IC56	8-759-906-54	TL064CNS: TI
IC57	8-759-250-20	TC5020BP: TOSHIBA
IC58	8-759-200-79	TC4049BF: TOSHIBA
IC59	8-759-250-20	TC5020BP: TOSHIBA
IC60	8-759-250-20	TC5020BP: TOSHIBA
IC61	8-759-250-20	TC5020BP: TOSHIBA
IC62	8-759-906-54	TL064CNS: TI
IC63	8-759-906-54	TL064CNS: TI
IC64	8-759-906-54	TL064CNS: TI
IC65	8-759-906-54	TL064CNS: TI
IC66	8-759-906-54	TL064CNS: TI
IC67	8-759-906-54	TL064CNS: TI
IC68	8-759-906-54	TL064CNS: TI
IC70	8-759-200-92	TC5012BF: TOSHIBA
IC71	8-759-200-92	TC5012BF: TOSHIBA
IC72	8-759-200-92	TC5012BF: TOSHIBA
IC73	8-759-200-79	TC4049BF: TOSHIBA

Ref No.	Part No.	Description
IC74	8-759-204-06	TC4075BF: TOSHIBA
IC75	8-759-200-74	TC4023BF: TOSHIBA
IC76	8-759-200-92	TC5012BF: TOSHIBA
IC77	8-759-200-92	TC5012BF: TOSHIBA
IC78	8-759-200-80	TC4050BF: TOSHIBA
IC79	8-759-200-80	TC4050BF: TOSHIBA
IC80	8-759-200-80	TC4050BF: TOSHIBA
IC82	8-759-200-68	TC4011BF: TOSHIBA
IC83	8-759-200-68	TC4011BF: TOSHIBA
IC84	8-759-200-79	TC4049BF: TOSHIBA
IC85	8-759-903-65	SN74LS365AN: TI
IC86	8-759-903-65	SN74LS365AN: TI
IC87	8-759-250-20	TC5020BP: TOSHIBA
IC88	8-759-200-92	TC5012BF: TOSHIBA
IC89	8-759-200-92	TC5012BF: TOSHIBA
IC90	8-759-200-92	TC5012BF: TOSHIBA
IC92	8-759-200-68	TC4011BF: TOSHIBA
IC93	8-759-200-68	TC4011BF: TOSHIBA
IC95	8-759-200-99	TC4051BF: TOSHIBA
IC96	8-759-200-99	TC4051BF: TOSHIBA
IC97	8-759-300-91	HD14042BFP: HITACHI
IC98	8-759-250-20	TC5020BP: TOSHIBA
IC99	8-759-204-06	TC4075BF: TOSHIBA
IC100	8-759-906-54	TL064CNS: TI
Q1	8-729-100-76	2SA812
Q2	8-729-100-66	2SC1623
Q3	8-729-100-66	2SC1623
Q4	8-729-100-66	2SC1623
Q5	8-729-100-66	2SC1623
Q6	8-729-100-76	2SA812
Q7	8-729-100-66	2SC1623
Q8	8-729-100-66	2SC1623
Q9	8-729-100-76	2SA812
Q10	8-729-100-76	2SA812
Q11	8-729-100-76	2SA812
Q12	8-729-100-66	2SC1623
Q13	8-729-100-66	2SC1623
Q14	8-729-100-66	2SC1623
Q15	8-729-100-66	2SC1623
Q16	8-729-100-66	2SC1623
Q17	8-729-100-76	2SA812
Q18	8-729-100-66	2SC1623
Q19	8-729-100-76	2SA812
Q20	8-729-100-66	2SC1623

Ref No.	Part No.	Description
Q21	8-729-100-76	2SA812
Q22	8-729-100-66	2SC1623
Q23	8-729-100-76	2SA812
Q24	8-729-100-66	2SC1623
Q25	8-729-100-76	2SA812
Q26	8-729-100-66	2SC1623
Q27	8-729-100-76	2SA812
Q28	8-729-100-66	2SC1623
Q29	8-729-100-76	2SA812
Q30	8-729-100-66	2SC1623
Q31	8-729-100-76	2SA812
Q32	8-729-100-66	2SC1623
Q33	8-729-100-76	2SA812
Q34	8-729-100-66	2SC1623
Q35	8-729-100-76	2SA812
Q36	8-729-100-66	2SC1623
Q37	8-729-100-76	2SA812
Q38	8-729-100-66	2SC1623
Q39	8-729-100-76	2SA812
Q40	8-729-100-66	2SC1623
Q41	8-729-100-76	2SA812
Q42	8-729-100-66	2SC1623
Q43	8-729-100-76	2SA812
Q44	8-729-100-66	2SC1623
Q45	8-729-100-76	2SA812
Q46	8-729-100-66	2SC1623
Q47	8-729-100-76	2SA812
Q48	8-729-100-66	2SC1623
Q49	8-729-100-76	2SA812
Q50	8-729-100-66	2SC1623
Q51	8-729-100-76	2SA812
Q52	8-729-100-66	2SC1623
Q53	8-729-100-76	2SA812
Q54	8-729-100-66	2SC1623
Q55	8-729-100-76	2SA812
Q64	8-729-100-76	2SA812
Q65	8-729-100-76	2SA812
Q66	8-729-100-76	2SA812
RV1	1-228-394-00	METAL 4700
RV2	1-228-394-00	METAL 4700
RV3	1-228-394-00	METAL 4700
RV4	1-228-519-00	METAL 2200
RV5	1-228-394-00	METAL 4700

Ref No.	Part No.	Description
RV6	**1-228-519-00**	**METAL 2200**
RV7	**1-228-394-00**	**METAL 4700**
RV8	**1-228-394-00**	**METAL 4700**
RV9	**1-228-394-00**	**METAL 4700**
RV10	**1-228-394-00**	**METAL 4700**
RV11	**1-228-394-00**	**METAL 4700**
RV12	**1-228-519-00**	**METAL 2200**
RV13	**1-228-394-00**	**METAL 4700**
RV14	**1-228-519-00**	**METAL 2200**
RV15	**1-228-394-00**	**METAL 4700**
RV16	**1-228-394-00**	**METAL 4700**
X1	**1-527-992-21**	**6MHz**
X2	**1-527-992-21**	**6MHz**
X3	**1-527-941-00**	**10.944MHz**

SY-52 BOARD

Ref No.	Part No.	Description
	A-7615-204-A	SY-41A ASSY "SY-41, SY-52" (J, UC) (BRZ)
	A-7615-207-A	SY-41A ASSY "SY-41, SY-52" (EK)
	A-7513-362-A	MOUNTED CIRCUIT BOARD "SY-52" (J, UC) (BRZ)
	A-7513-363-A	MOUNTED CIRCUIT BOARD "SY-52" (EK)
	1-562-662-21	RECEPTACLE 40P
C2	**1-107-210-00**	**MICA 22PF 5% 500V**
C3	**1-107-210-00**	**MICA 22PF 5% 500V**
C7	**1-163-137-00**	**CERAMIC CHIP 680PF 5% 50V**
C20	**1-107-161-00**	**MICA 39PF 5% 500V**
C23	**1-107-161-00**	**MICA 39PF 5% 500V**
D1	**8-719-105-32**	**RD2.7M-B2**
D2	**8-719-100-05**	**1S2837**
D3	**8-719-106-08**	**RD6.2M-B2**
D4	**8-719-106-08**	**RD6.2M-B2**
D5	**8-719-106-08**	**RD6.2M-B2**
D6	**8-719-106-08**	**RD6.2M-B2**
D7	**8-719-106-08**	**RD6.2M-B2**
IC1	**8-759-200-80**	**TC4050BF: TOSHIBA**
IC3	**8-759-778-28**	**μPD8749HC-MZN255021: NEC (J, UC) (BRZ)**
	8-759-778-29	**μPD8749HC-MZP255021: NEC (EK)**
IC4	**8-759-200-80**	**TC4050BF: TOSHIBA**
IC5	**8-759-205-36**	**TC74HC573F: TOSHIBA**
IC6	**8-759-200-88**	**TC4512BF: TOSHIBA**
IC7	**8-759-274-76**	**TC7476BF: TOSHIBA**
IC8	**8-759-200-79**	**TC4049BF: TOSHIBA**
IC9	**8-759-200-67**	**TC4001BF: TOSHIBA**
IC10	**8-759-200-89**	**TC4516BF: TOSHIBA**
IC11	**8-759-205-36**	**TC74HC573F: TOSHIBA**
IC12	**8-759-200-80**	**TC4050BF: TOSHIBA**
Q1	**8-729-100-66**	**2SC1623**
Q2	**8-729-100-66**	**2SC1623**
Q3	**8-729-100-66**	**2SC1623**
Q4	**8-729-100-76**	**2SA812**
Q5	**8-729-100-76**	**2SA812**
RV1	**1-228-459-00**	**METAL 10K**
X1	**1-527-941-00**	**10.944MHz**

SW-94, SW-100, VR-25, VR-26, VR-68

SW-94 BOARD

Ref No.	Part No.	Description
	1-617-836-12	PRINTED CIRCUIT BOARD "SW-94"
R1	**1-247-104-00**	**CARBON 75 5% 1/4W**
S1	**1-554-972-11**	**SLIDE**

SW-100 BOARD

Ref No.	Part No.	Description
	1-617-828-12	PRINTED CIRCUIT BOARD "SW-100"
R1	**1-247-104-00**	**CARBON 75 5% 1/4W**
R2	**1-247-104-00**	**CARBON 75 5% 1/4W**
S1	**1-516-576-00**	**SLIDE**
S2	**1-516-576-00**	**SLIDE**

VR-25 BOARD

Ref No.	Part No.	Description
	1-617-823-12	PRINTED CIRCUIT BOARD "VR-25"
RV1	**1-226-724-00**	**METAL 100K**

VR-26 BOARD

Ref No.	Part No.	Description
	1-617-831-11	PRINTED CIRCUIT BOARD "VR-26"
RV1	**1-237-127-11**	**METAL 5K**

VR-68 BOARD

Ref No.	Part No.	Description
	1-622-693-11	PRINTED CIRCUIT BOARD "VR-68"
Q1	**8-729-117-54**	**2SA1175**
RV44	**1-226-369-00**	**METAL 5K**
S1	**1-570-839-11**	**SLIDE**

WP-20 BOARD

Ref No.	Part No.	Description
	A-7615-205-A	WP-20(N) ASSY "WP-20, WP-21" (J, UC) (BRZ)
	A-7615-208-A	WP-20(P) ASSY "WP-20, WP-21" (EK)
C2	1-163-117-00	CERAMIC CHIP 100PF 5% 50V
C4	1-124-282-00	ELECT 22 20% 25V
C7	1-124-282-00	ELECT 22 20% 25V
C22	1-124-282-00	ELECT 22 20% 25V
C23	1-124-584-00	ELECT 100 20% 10V
C61	1-163-141-00	CERAMIC CHIP 0.001 5% 50V
C66	1-124-282-00	ELECT 22 20% 25V
C70	1-124-282-00	ELECT 22 20% 25V
C87	1-124-282-00	ELECT 22 20% 25V
C89	1-124-584-00	ELECT 100 20% 10V
C106	1-124-282-00	ELECT 22 20% 25V
C108	1-124-455-00	ELECT 100 20% 16V
C116	1-124-282-00	ELECT 22 20% 25V
C119	1-124-285-00	ELECT 22 20% 16V
C131	1-107-210-00	MICA 22PF 5% 500V
C132	1-163-117-00	CERAMIC CHIP 100PF 5% 50V
C138	1-163-137-00	CERAMIC CHIP 680PF5% 50V
C140	1-163-117-00	CERAMIC CHIP 100PF 5% 50V
C141	1-163-135-00	CERAMIC CHIP 560PF 5% 50V
C142	1-163-117-00	CERAMIC CHIP 100PF 5% 50V
C143	1-163-135-00	CERAMIC CHIP 560PF 5% 50V
C144	1-124-282-00	ELECT 22 20% 25V
C157	1-163-133-00	CERAMIC CHIP 470PF 5% 50V
C160	1-124-285-00	ELECT 22 20% 16V
C165	1-124-455-00	ELECT 100 20% 16V
C175	1-124-141-00	ELECT 330 20% 10V
C176	1-124-141-00	ELECT 330 20% 10V
C177	1-124-141-00	ELECT 330 20% 10V
C179	1-124-144-00	ELECT 220 20% 16V
C181	1-163-101-00	CERAMIC CHIP 22PF 5% 50V
C182	1-163-117-00	CERAMIC CHIP 100PF 5% 50V
C183	1-124-141-00	ELECT 330 20% 10V
C184	1-124-144-00	ELECT 220 20% 16V
C185	1-124-144-00	ELECT 220 20% 16V
C186	1-124-141-00	ELECT 330 20% 10V
C187	1-124-141-00	ELECT 330 20% 10V
C188	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
CN1	1-506-654-11	RECEPTACLE, 100P MALE

Ref No.	Part No.	Description
D1	8-719-100-03	1S2835
D2	8-719-100-03	1S2835
D4	8-719-100-03	1S2835
D5	8-719-100-03	1S2835
D8	8-719-100-03	1S2835
D9	8-719-100-03	1S2835
D10	8-719-100-03	1S2835
D11	8-719-100-03	1S2835
D12	8-719-100-03	1S2835
D13	8-719-100-03	1S2835
D14	8-719-100-03	1S2835
D17	8-719-100-03	1S2835
D18	8-719-100-03	1S2835
D19	8-719-100-03	1S2835
D20	8-719-100-03	1S2835
FL1	1-235-246-00	3.58MHz (J, UC) (BRZ)
	1-235-245-00	4.4MHz (EK)
IC1	8-759-245-28	TC4528BP: TOSHIBA
IC2	8-759-245-28	TC4528BP: TOSHIBA
IC3	8-759-340-46	HD14046BP: HITACHI
IC4	8-759-240-24	TC4024BP: TOSHIBA
IC5	8-759-990-82	TL082CP: TI
IC6	8-759-990-82	TL082CP: TI
IC7	8-759-015-95	MC1595L: MOTOROLA
IC9	8-759-208-08	TC4052BPHB: TOSHIBA
IC11	8-759-014-96	MC1496P: MOTOROLA
IC12	8-759-240-24	TC4024BP: TOSHIBA

Ref No.	Part No.	Description
IC13	8-759-208-08	TC4052BPHB: TOSHIBA
IC14	8-759-208-10	TC4053BPHB: TOSHIBA
IC15	8-759-208-10	TC4053BPHB: TOSHIBA
IC16	8-759-208-10	TC4053BPHB: TOSHIBA
IC17	8-759-208-08	TC4052BPHB: TOSHIBA
IC18	8-759-208-10	TC4053BPHB: TOSHIBA
IC19	8-759-208-10	TC4053BPHB: TOSHIBA
IC20	8-759-208-08	TC4052BPHB: TOSHIBA
IC21	8-759-133-90	μPC339C: NEC
IC27	8-759-990-82	TL082CP: TI
IC29	8-759-205-77	TC504027BP: TOSHIBA
IC30	8-759-345-38	HD14538BP: HITACHI
IC31	8-759-340-46	HD14046BP: HITACHI
IC32	8-759-240-24	TC4024BP: TOSHIBA
IC33	8-759-990-82	TL082CP: TI
IC34	8-759-990-82	TL082CP: TI
IC35	8-759-015-95	MC1595L: MOTOROLA
IC36	8-759-208-10	TC4053BPHB: TOSHIBA
IC37	8-759-014-96	MC1496P: MOTOROLA
IC38	8-759-208-08	TC4052BPHB: TOSHIBA
IC39	8-759-208-10	TC4053BPHB: TOSHIBA
IC40	8-759-208-08	TC4052BPHB: TOSHIBA
IC41	8-759-240-11	TC4011BP: TOSHIBA
IC42	8-759-208-10	TC4053BPHB: TOSHIBA
IC43	8-759-208-10	TC4053BPHB: TOSHIBA
IC44	8-759-208-08	TC4052BPHB: TOSHIBA
IC45	8-759-208-08	TC4052BPHB: TOSHIBA
IC46	8-759-939-92	BX3992P: SONY
IC47	8-759-103-19	μPC319C: NEC
IC48	8-759-103-19	μPC319C: NEC
IC49	8-759-208-10	TC4053BPHB: TOSHIBA
IC50	8-759-240-28	TC4028BP: TOSHIBA
IC51	8-759-208-10	TC4053BPHB: TOSHIBA
IC52	8-759-240-11	TC4011BP: TOSHIBA
IC53	8-759-240-42	TC4042BP: TOSHIBA
IC54	8-759-208-10	TC4053BPHB: TOSHIBA
IC55	8-759-208-10	TC4053BPHB: TOSHIBA
Q1	8-729-100-66	2SC1623
Q2	8-729-100-66	2SC1623
Q3	8-729-100-76	2SA812
Q4	8-729-100-66	2SC1623
Q5	8-729-100-66	2SC1623

Ref No.	Part No.	Description
Q6	8-729-100-76	2SA812
Q7	8-729-100-66	2SC1623
Q8	8-729-100-76	2SA812
Q9	8-729-100-66	2SC1623
Q10	8-729-100-66	2SC1623
Q11	8-729-100-66	2SC1623
Q12	8-729-100-66	2SC1623
Q13	8-729-100-66	2SC1623
Q14	8-729-100-76	2SA812
Q15	8-729-100-76	2SA812
Q16	8-729-100-66	2SC1623
Q17	8-729-100-66	2SC1623
Q18	8-729-100-66	2SC1623
Q19	8-729-100-76	2SA812
Q20	8-729-100-66	2SC1623
Q21	8-729-100-76	2SA812
Q22	8-729-100-76	2SA812
Q23	8-729-100-66	2SC1623
Q24	8-729-100-76	2SA812
Q25	8-729-100-66	2SC1623
Q26	8-729-100-66	2SC1623
Q27	8-729-100-66	2SC1623
Q28	8-729-100-66	2SC1623
Q29	8-729-100-66	2SC1623
Q30	8-729-100-76	2SA812
Q31	8-729-100-66	2SC1623
Q32	8-729-100-66	2SC1623
Q33	8-729-100-66	2SC1623
Q42	8-729-100-66	2SC1623
Q43	8-729-100-66	2SC1623
Q47	8-729-625-91	2SC1159
Q48	8-729-697-92	2SA979
Q49	8-729-100-66	2SC1623
Q50	8-729-100-66	2SC1623
Q51	8-729-100-76	2SA812
Q52	8-729-100-76	2SA812
Q53	8-729-100-66	2SC1623
Q54	8-729-100-66	2SC1623
Q55	8-729-100-66	2SC1623
Q56	8-729-100-76	2SA812
Q57	8-729-100-66	2SC1623
Q58	8-729-100-66	2SC1623
Q59	8-729-100-76	2SA812
Q60	8-729-100-76	2SA812
Q61	8-729-100-66	2SC1623

Ref No.	Part No.	Description
Q62	8-729-100-66	2SC1623
Q63	8-729-100-66	2SC1623
Q64	8-729-100-66	2SC1623
Q65	8-729-100-66	2SC1623
Q66	8-729-100-66	2SC1623
Q67	8-729-100-66	2SC1623
Q68	8-729-100-66	2SC1623
Q69	8-729-100-66	2SC1623
Q70	8-729-100-66	2SC1623
Q71	8-729-100-66	2SC1623
Q72	8-729-100-66	2SC1623
Q73	8-729-625-91	2SC1159
Q74	8-729-100-76	2SA812
Q75	8-729-100-66	2SC1623
Q76	8-729-100-76	2SA812
Q77	8-729-100-76	2SA812
Q78	8-729-100-66	2SC1623
Q79	8-729-100-76	2SA812
Q81	8-729-100-66	2SC1623
Q82	8-729-100-66	2SC1623
Q83	8-729-100-66	2SC1623
Q86	8-729-100-66	2SC1623
Q87	8-729-100-66	2SC1623
Q88	8-729-100-76	2SA812
Q89	8-729-100-66	2SC1623
Q90	8-729-100-66	2SC1623
Q91	8-729-100-66	2SC1623
Q92	8-729-100-66	2SC1623
Q93	8-729-100-66	2SC1623
Q94	8-729-100-76	2SA812
Q95	8-729-100-76	2SA812
Q96	8-729-100-66	2SC1623
Q97	8-729-100-66	2SC1623
Q98	8-729-100-76	2SA812
Q99	8-729-100-66	2SC1623
Q100	8-729-100-76	2SA812
Q101	8-729-100-76	2SA812
Q102	8-729-100-66	2SC1623
Q103	8-729-100-76	2SA812
Q104	8-729-100-66	2SC1623
Q105	8-729-100-66	2SC1623
Q106	8-729-100-66	2SC1623
Q107	8-729-100-66	2SC1623
Q108	8-729-100-66	2SC1623
Q109	8-729-100-76	2SA812

Ref No.	Part No.	Description
Q110	8-729-100-66	2SC1623
Q111	8-729-100-66	2SC1623
Q112	8-729-100-66	2SC1623
Q113	8-729-100-66	2SC1623
Q114	8-729-100-76	2SA812
Q115	8-729-100-66	2SC1623
Q116	8-729-100-66	2SC1623
Q117	8-729-100-66	2SC1623
Q118	8-729-100-66	2SC1623
Q119	8-729-100-66	2SC1623
Q120	8-729-100-66	2SC1623
Q121	8-729-100-66	2SC1623
Q122	8-729-100-66	2SC1623
Q123	8-729-100-66	2SC1623
Q124	8-729-100-76	2SA812
Q125	8-729-100-76	2SA812
Q126	8-729-100-66	2SC1623
Q129	8-729-100-66	2SC1623
Q135	8-729-100-66	2SC1623
Q138	8-729-100-76	2SA812
Q139	8-729-100-76	2SA812
Q140	8-729-100-66	2SC1623
Q141	8-729-100-66	2SC1623
Q142	8-729-100-66	2SC1623
Q143	8-729-100-66	2SC1623
Q144	8-729-100-66	2SC1623
Q145	8-729-100-66	2SC1623
Q146	8-729-100-66	2SC1623
Q147	8-729-100-66	2SC1623
Q148	8-729-100-66	2SC1623
Q149	8-729-100-66	2SC1623
Q150	8-729-100-66	2SC1623
Q151	8-729-100-66	2SC1623
Q152	8-729-100-66	2SC1623
Q153	8-729-100-66	2SC1623
Q154	8-729-100-66	2SC1623
Q155	8-729-100-76	2SA812
Q156	8-729-100-66	2SC1623
Q157	8-729-100-66	2SC1623
Q158	8-729-100-66	2SC1623
Q159	8-729-100-66	2SC1623
Q160	8-729-100-66	2SC1623
Q161	8-729-100-66	2SC1623
Q162	8-729-100-66	2SC1623
Q163	8-729-100-66	2SC1623

Ref No.	Part No.	Description
Q164	8-729-100-66	2SC1623
Q165	8-729-100-66	2SC1623
Q166	8-729-100-66	2SC1623
Q167	8-729-100-76	2SA812
Q168	8-729-100-76	2SA812
Q169	8-729-100-76	2SA812
Q170	8-729-100-66	2SC1623
Q171	8-729-100-66	2SC1623
Q172	8-729-100-66	2SC1623
Q173	8-729-100-76	2SA812
Q174	8-729-100-76	2SA812
Q175	8-729-100-66	2SC1623
Q176	8-729-100-76	2SA812
Q177	8-729-100-66	2SC1623
Q178	8-729-100-76	2SA812
Q179	8-729-100-76	2SA812
Q180	8-729-100-76	2SA812
Q181	8-729-100-66	2SC1623
Q182	8-729-100-66	2SC1623
Q183	8-729-100-76	2SA812
Q184	8-729-100-76	2SA812
Q185	8-729-100-66	2SC1623
Q186	8-729-100-66	2SC1623
Q187	8-729-100-76	2SA812
Q188	8-729-100-66	2SC1623
Q189	8-729-100-76	2SA812
Q190	8-729-100-76	2SA812
Q191	8-729-100-76	2SA812
Q192	8-729-100-76	2SA812
Q193	8-729-100-76	2SA812
Q194	8-729-100-66	2SC1623
Q195	8-729-100-66	2SC1623
Q196	8-729-100-66	2SC1623
Q197	8-729-100-76	2SA812
Q198	8-729-100-76	2SA812
Q199	8-729-100-76	2SA812
RV1	1-228-462-00	METAL 100K
RV2	1-228-458-00	METAL 5K
RV3	1-228-458-00	METAL 5K
RV4	1-228-459-00	METAL 10K
RV5	1-228-455-00	METAL 500
RV6	1-228-459-00	METAL 10K
RV7	1-228-459-00	METAL 10K
RV8	1-228-460-00	METAL 20K
RV9	1-228-458-00	METAL 5K
RV10	1-228-458-00	METAL 5K

Ref No.	Part No.	Description
RV17	1-228-457-00	METAL 2K
RV18	1-228-458-00	METAL 5K
RV19	1-228-461-00	METAL 50K
RV20	1-228-461-00	METAL 50K
RV21	1-228-456-00	METAL 1K
RV22	1-237-500-00	METAL 1K
RV23	1-228-459-00	METAL 10K
RV24	1-228-459-00	METAL 10K
RV25	1-228-394-00	METAL 4700
RV26	1-228-459-00	METAL 10K
RV27	1-228-463-00	METAL 200K
RV28	1-228-458-00	METAL 5K
RV29	1-228-458-00	METAL 5K
RV30	1-228-459-00	METAL 10K
RV31	1-228-455-00	METAL 500
RV32	1-228-460-00	METAL 20K
RV33	1-228-459-00	METAL 10K
RV34	1-228-458-00	METAL 5K
RV35	1-228-460-00	METAL 20K
RV36	1-228-458-00	METAL 5K
RV37	1-228-456-00	METAL 1K
RV38	1-237-500-00	METAL 1K
RV39	1-228-457-00	METAL 2K
RV40	1-228-460-00	METAL 20K
RV41	1-228-460-00	METAL 20K
RV42	1-228-459-00	METAL 10K
RV43	1-228-459-00	METAL 10K
RV44	1-228-458-00	METAL 5K
RV45	1-228-461-00	METAL 50K
RV46	1-228-461-00	METAL 50K
RV47	1-228-456-00	METAL 1K
RV48	1-228-459-00	METAL 10K
RV49	1-228-457-00	METAL 2K
RV50	1-228-459-00	METAL 10K
RV51	1-228-459-00	METAL 10K
RV52	1-228-460-00	METAL 20K
RV53	1-228-455-00	METAL 500
RV54	1-228-462-00	METAL 100K
RV55	1-228-458-00	METAL 5K
RV56	1-228-460-00	METAL 20K
RV57	1-228-460-00	METAL 20K
RV58	1-228-460-00	METAL 20K
RV59	1-228-462-00	METAL 100K
RV60	1-228-461-00	METAL 50K
RV61	1-228-458-00	METAL 5K
RV62	1-228-458-00	METAL 5K
S1	1-570-514-11	SLIDE
S2	1-554-399-00	TOGGLE
S3	1-554-399-00	TOGGLE

WP-21 BOARD

Ref No.	Part No.	Description
	A-7513-570-A	MOUNTED CIRCUIT BOARD "WP-21(N)" (J, UC) (BRZ)
	A-7513-577-A	MOUNTED CIRCUIT BOARD "WP-21(P)" (EK)
C9	1-163-125-00	CERAMIC CHIP 220PF 5% 50V
C10	1-163-125-00	CERAMIC CHIP 220PF 5% 50V
D1	8-719-100-05	1S2837
D2	8-719-815-55	1S1555
D3	8-719-815-55	1S1555
IC1	8-759-240-12	TC4012BP: TOSHIBA
IC2	8-759-015-95	MC1595L: MOTOROLA
IC3	8-759-918-92	HA3-2525-5: HARRIS
IC4	8-759-015-95	MC1595L: MOTOROLA
IC5	8-759-918-92	HA3-2525-5: HARRIS
IC6	8-759-015-95	MC1595L: MOTOROLA
IC7	8-759-918-92	HA3-2525-5: HARRIS
IC8	8-759-015-95	MC1595L: MOTOROLA
IC9	8-759-918-92	HA3-2525-5: HARRIS
IC10	8-759-208-10	TC4053BPHB: TOSHIBA
IC11	8-759-990-62	TL062CP: TI
IC12	8-759-208-10	TC4053BPHB: TOSHIBA
Q1	8-729-100-76	2SA812
R1	1-216-643-11	METAL CHIP 470 0.50% 1/16W
R2	1-216-643-11	METAL CHIP 470 0.50% 1/16W
R3	1-216-669-11	METAL CHIP 5600 0.50% 1/16W
R4	1-216-669-11	METAL CHIP 5600 0.50% 1/16W
R5	1-216-643-11	METAL CHIP 470 0.50% 1/16W
R6	1-216-643-11	METAL CHIP 470 0.50% 1/16W
R7	1-216-675-11	METAL CHIP 10K 0.50% 1/16W
R8	1-216-665-11	METAL CHIP 3900 0.50% 1/16W
R9	1-216-665-11	METAL CHIP 3900 0.50% 1/16W
R10	1-216-659-11	METAL CHIP 2200 0.50% 1/16W
R11	1-216-651-11	METAL CHIP 1K 0.50% 1/16W
R12	1-216-651-11	METAL CHIP 1K 0.50% 1/16W
R13	1-216-677-11	METAL CHIP 12K 0.50% 1/16W
R14	1-216-679-11	METAL CHIP 15K 0.50% 1/16W
R15	1-216-643-11	METAL CHIP 470 0.50% 1/16W
R16	1-216-643-11	METAL CHIP 470 0.50% 1/16W
R17	1-216-669-11	METAL CHIP 5600 0.50% 1/16W
R18	1-216-669-11	METAL CHIP 5600 0.50% 1/16W
R19	1-216-643-11	METAL CHIP 470 0.50% 1/16W
R20	1-216-643-11	METAL CHIP 470 0.50% 1/16W
R21	1-216-665-11	METAL CHIP 3900 0.50% 1/16W
R22	1-216-665-11	METAL CHIP 3900 0.50% 1/16W
R23	1-216-659-11	METAL CHIP 2200 0.50% 1/16W
R24	1-216-651-11	METAL CHIP 1K 0.50% 1/16W
R25	1-216-651-11	METAL CHIP 1K 0.50% 1/16W
R26	1-216-659-11	METAL CHIP 2200 0.50% 1/16W
R27	1-216-665-11	METAL CHIP 3900 0.50% 1/16W
R28	1-216-643-11	METAL CHIP 470 0.50% 1/16W
R29	1-216-643-11	METAL CHIP 470 0.50% 1/16W
R30	1-216-675-11	METAL CHIP 10K 0.50% 1/16W
R31	1-216-669-11	METAL CHIP 5600 0.50% 1/16W
R32	1-216-669-11	METAL CHIP 5600 0.50% 1/16W
R33	1-216-643-11	METAL CHIP 470 0.50% 1/16W
R34	1-216-643-11	METAL CHIP 470 0.50% 1/16W
R35	1-216-675-11	METAL CHIP 10K 0.50% 1/16W
R36	1-216-665-11	METAL CHIP 3900 0.50% 1/16W
R37	1-216-665-11	METAL CHIP 3900 0.50% 1/16W
R38	1-216-659-11	METAL CHIP 2200 0.50% 1/16W
R39	1-216-651-11	METAL CHIP 1K 0.50% 1/16W
R40	1-216-651-11	METAL CHIP 1K 0.50% 1/16W
R41	1-216-677-11	METAL CHIP 12K 0.50% 1/16W
R42	1-216-677-11	METAL CHIP 12K 0.50% 1/16W
R43	1-216-643-11	METAL CHIP 470 0.50% 1/16W
R44	1-216-643-11	METAL CHIP 470 0.50% 1/16W
R45	1-216-669-11	METAL CHIP 5600 0.50% 1/16W
R46	1-216-669-11	METAL CHIP 5600 0.50% 1/16W
R47	1-216-643-11	METAL CHIP 470 0.50% 1/16W
R48	1-216-643-11	METAL CHIP 470 0.50% 1/16W
R49	1-216-667-11	METAL CHIP 4700 0.50% 1/16W
R50	1-216-667-11	METAL CHIP 4700 0.50% 1/16W

Ref No.	Part No.	Description
R51	**1-216-659-11**	**METAL CHIP 2200 0.50% 1/16W**
R52	**1-216-651-11**	**METAL CHIP 1K 0.50% 1/16W**
R53	**1-216-651-11**	**METAL CHIP 1K 0.50% 1/16W**
R54	**1-216-659-11**	**METAL CHIP 2200 0.50% 1/16W**
R55	**1-216-669-11**	**METAL CHIP 5600 0.50% 1/16W**
R56	**1-216-675-11**	**METAL CHIP 10K 0.50% 1/16W**
R57	**1-216-675-11**	**METAL CHIP 10K 0.50% 1/16W**
R58	**1-216-669-11**	**METAL CHIP 8200 0.50% 1/16W**
R59	**1-216-675-11**	**METAL CHIP 10K 0.50% 1/16W**
R60	**1-216-687-11**	**METAL CHIP 33K 0.50% 1/16W**
R61	**1-216-675-11**	**METAL CHIP 10K 0.50% 1/16W**
R62	**1-216-687-11**	**METAL CHIP 33K 0.50% 1/16W**
R63	**1-216-627-11**	**METAL CHIP 100 0.50% 1/16W**
R64	**1-216-667-11**	**METAL CHIP 4700 0.50% 1/16W**
R65	**1-216-627-11**	**METAL CHIP 100 0.50% 1/16W**
RV1	**1-228-461-00**	**METAL 50K**
RV2	**1-228-473-00**	**METAL 5K**
RV3	**1-228-458-00**	**METAL 5K**
RV4	**1-228-461-00**	**METAL 50K**
RV5	**1-228-461-00**	**METAL 50K**
RV6	**1-228-473-00**	**METAL 5K**
RV7	**1-228-458-00**	**METAL 5K**
RV8	**1-228-473-00**	**METAL 5K**
RV9	**1-228-459-00**	**METAL 10K**
RV10	**1-228-458-00**	**METAL 5K**

POWER UNIT

AC-58 BOARD

Ref No.	Part No.	Description
	A-7513-377-A	MOUNTED CIRCUIT BOARD "AC-58(120V)" (UC) (BRZ)
	A-7513-378-A	MOUNTED CIRCUIT BOARD "AC-58(100V)" (J)
	A-7513-379-A	MOUNTED CIRCUIT BOARD "AC-58(220V)" (EK)
	1-533-131-00	**HOLDER, FUSE**
C1	**1-106-220-00**	**MYLAR 0.1 10% 100V**
C2	**1-106-220-00**	**MYLAR 0.1 10% 100V**
C3	**1-106-220-00**	**MYLAR 0.1 10% 100V**
C4	**1-106-220-00**	**MYLAR 0.1 10% 100V**
C5	**1-106-220-00**	**MYLAR 0.1 10% 100V**
C6	**1-125-422-00**	**ELECT 22000 20% 25V**
C7	**1-106-220-00**	**MYLAR 0.1 10% 100V**
C8	**1-106-220-00**	**MYLAR 0.1 10% 100V**
C9	**1-106-220-00**	**MYLAR 0.1 10% 100V**
C10	**1-106-220-00**	**MYLAR 0.1 10% 100V**
C11	**1-106-220-00**	**MYLAR 0.1 10% 100V**
C12	**1-125-298-00**	**ELECT 10000 20% 25V**
C13	**1-106-220-00**	**MYLAR 0.1 10% 100V**
C14	**1-125-297-00**	**ELECT 4700 20% 25V**
CN1	1-506-371-00	RECEPTACLE, 2P MALE
CN2	1-560-357-00	RECEPTACLE, 3P MALE
	1-561-515-00	PLUG, HOUSING 3P FEMALE
	1-560-372-00	PLUG, CONTACT
CN3	1-506-371-00	RECEPTACLE, 2P MALE
CN4	1-506-371-00	RECEPTACLE, 2P MALE
CN5	1-560-359-00	RECEPTACLE, 5P MALE
	1-561-517-00	PLUG, HOUSING 5P FEMALE
	1-560-372-00	PLUG, CONTACT
CN6	1-560-357-00	RECEPTACLE, 3P MALE
	1-561-515-00	PLUG, HOUSING 3P FEMALE
	1-560-372-00	PLUG, CONTACT
D1	**8-719-801-51**	**S5151R**
D2	**8-719-851-51**	**S5151**
D3	**8-719-801-51**	**S5151R**
D4	**8-719-851-51**	**S5151**
D5	**8-719-900-01**	**M4E-1**
⚠F1	**1-532-747-11**	**5A (J, UC) (BRZ)**
	1-532-299-00	**5A (EK)**
F2	**1-532-742-11**	**1.6A (J, UC) (BRZ)**
	1-532-259-00	**1.6A (EK)**
F3	**1-532-284-00**	**0.63A (EK)**
	1-532-431-11	**0.63A (J)**
	1-532-738-11	**0.63A (J, UC) (BRZ)**

AC-77/77A BOARD

Ref No.	Part No.	Description
	1-619-553-21	MOUNTED CIRCUIT BOARD "AC-77(120V)" (J, UC) (BRZ)
	1-619-553-11	MOUNTED CIRCUIT BOARD "AC-77A(220V)" (EK)
⚠C1	1-136-185-00	MYLAR 0.22 20% 250V
C2	1-106-220-00	MYLAR 0.1 10% 100V
C3	1-106-220-00	MYLAR 0.1 10% 100V
C4	1-106-220-00	MYLAR 0.1 10% 100V
C5	1-106-220-00	MYLAR 0.1 10% 100V
C6	1-106-220-00	MYLAR 0.1 10% 100V
C7	1-125-422-11	ELECT 22000 20% 25V
⚠CN1	1-506-348-XX	RECEPTACLE, 3P MALE
	1-509-896-00	PLUG, HOUSING 3P FEMALE
	1-509-898-00	PLUG, CONTACT
CN2	1-506-348-XX	RECEPTACLE, 3P MALE
⚠CN4	1-506-371-00	RECEPTACLE, 2P
CN5	1-560-358-00	RECEPTACLE, 4P MALE
	1-561-516-00	PLUG, HOUSING 4P FEMALE
	1-560-372-00	PLUG, CONTACT
D1	8-719-801-51	S5151R
D2	8-719-851-51	S5151
⚠F1	1-532-743-11	GLASS TUBE 2A (J, UC) (BRZ)
	1-532-203-00	TIME LAG 2A (EK)
F2	1-532-598-00	GLASS TUBE 4A (J, UC) (BRZ)
	1-532-350-00	TIME LAG 4A (EK)

HN-72 BOARD

Ref No.	Part No.	Description
	1-618-285-11	PRINTED CIRCUIT BOARD "HN-72"
C1	1-125-374-11	ELECT 10000 20% 35V

PS-82 BOARD

Ref No.	Part No.	Description
	A-7513-380-A	MOUNTED CIRCUIT BOARD "PS-82"
CN1	1-560-357-00	RECEPTACLE, 3P MALE
	1-561-515-00	PLUG, HOUSING 3P FEMALE
	1-560-372-00	PLUG, CONTACT
CN2	1-560-357-00	RECEPTACLE, 3P MALE
	1-561-515-00	PLUG, HOUSING 3P FEMALE
	1-560-372-00	PLUG, CONTACT
CN3	1-560-359-00	RECEPTACLE, 5P MALE
	1-561-517-00	PLUG, HOUSING 5P FEMALE
	1-560-372-00	PLUG, CONTACT
CN4	1-560-362-00	RECEPTACLE, 10P MALE
	1-561-520-00	PLUG, HOUSING 10P FEMALE
	1-560-372-00	PLUG, CONTACT
CN5	1-560-357-00	RECEPTACLE, 3P MALE
	1-561-515-00	PLUG, HOUSING 3P FEMALE
	1-560-372-00	PLUG, CONTACT
CN6	1-560-360-00	RECEPTACLE, 6P MALE
	1-561-518-00	PLUG, HOUSING 6P FEMALE
	1-560-372-00	PLUG, CONTACT
CN7	1-506-666-11	RECEPTACLE, 10P MALE
	1-563-231-11	PLUG, HOUSING 10P FEMALE
CN8	1-506-664-11	RECEPTACLE, 7P MALE
	1-563-229-11	PLUG, HOUSING 7P FEMALE
CN9	1-560-357-00	RECEPTACLE, 3P MALE
	1-561-515-00	PLUG, HOUSING 3P FEMALE
	1-560-372-00	PLUG, CONTACT
CN10	1-560-357-00	RECEPTACLE, 3P MALE
D1	8-719-930-12	EQB01-12Z
D2	8-719-162-07	RD6.2E
D3	8-719-815-55	1S1555
D4	8-719-815-55	1S1555
D5	8-719-815-55	1S1555

PS-82

Ref No.	Part No.	Description
D6	**8-719-815-55**	**1S1555**
D7	**8-719-815-55**	**1S1555**
D8	**8-719-130-07**	**RD3.0E**
D9	**8-719-130-07**	**RD3.0E**
IC1	**8-759-729-03**	**NJM2903D: JRC**
IC2	**8-759-729-03**	**NJM2903D: JRC**
IC3	**1-806-327-11**	**μA78MG: FSC**
IC4	**1-806-327-11**	**μA78MG: FSC**
IC5	**8-759-729-03**	**NJM2903D: JRC**
IC6	**8-759-907-91**	**μA79MG-U1C: FSC**
IC7	**8-759-700-68**	**NJM79L09A: JRC**
Q1	**8-729-177-43**	**2SD774-3**
Q2	**8-729-606-33**	**2SC2603**
Q3	**8-729-606-33**	**2SC2603**
Q4	**8-729-606-33**	**2SC2603**
R1	**1-247-749-11**	**CABON 560 5% 1/2W**
R2	**1-247-731-11**	**CABON 22 5% 1/2W**
R3	**1-247-719-11**	**CABON 3300 5% 1/4W**
R4	**1-247-692-11**	**CABON 22 5% 1/4W**
R32	**1-247-728-11**	**CABON 12 5% 1/2W**
R38	**1-247-743-11**	**CABON 220 5% 1/2W**
RV3	**1-228-518-00**	**METAL 1K**
RV4	**1-228-518-00**	**METAL 1K**
RV5	**1-228-520-00**	**METAL 470**
RV6	**1-228-518-00**	**METAL 1K**
RY1	**1-515-355-00**	**12V, 720Ω**
RY2	**1-515-355-00**	**12V, 720Ω**
S1	**1-570-374-11**	**SLIDE "RY ON"**

POWER UNIT FRAME

Ref No.	Part No.	Description
	⚠1-509-547-00	**INLET 3P "AC IN"**
IC1	**8-759-700-51**	**NJM7805A: JRC**
IC2	**8-759-376-07**	**HA17807P: HITACHI**
IC4	**8-759-003-17**	**LM317T: NSC**
M1	**1-542-070-21**	**FAN**
Q1	**8-729-831-33**	**2SD313HP**
Q2	**8-729-831-33**	**2SD313HP**
Q3	**8-729-315-63**	**2SB856**
⚠S1	**1-570-117-11**	**SEESAW "POWER ON/OFF"**
⚠T1	**1-448-411-11**	**POWER (EK)**
	1-448-412-11	**POWER (J)**
	1-448-413-11	**POWER (UC) (BRZ)**
THP1	**1-202-860-00**	**100**

Ref No.	Part No.	Description
FRAME		
	1-464-595-11	**20 KEY BOARD UNIT**
	1-937-204-12	HARNESS (KY)
	1-937-095-13	HARNESS (HN)
CN1 ≀ CN11	**1-561-781-21**	**RECEPTACLE, BNC**
CN12 ≀ CN31	**1-561-336-00**	**RECEPTACLE, BNC**
CN32	**1-509-422-XX**	**RECEPTACLE, 6P FEMALE**
CN33	**1-509-422-XX**	**RECEPTACLE, 6P FEMALE**
CN34	**1-508-382-00**	**RECEPTACLE, 10P FEMALE**
CN35 ≀ CN38	**1-509-501-00**	**RECEPTACLE, 4P MALE**
CN39	**1-508-055-00**	**RECEPTACLE, 6P MALE.**
CN40	1-562-113-21	RECEPTACLE, 25P "RS-232C" FEMALE
	1-562-058-00	PLUG, CONTACT
CN41	**1-507-195-21**	**REMOTE CONTROL JACK "TRIGGER"**